Univerzita Karlova v Praze
Filozofická fakulta

# Habilitační práce

# *Practices of Reason*

2020 Ladislav Koreň

# *Practices of Reason*

# *Contents*

# *Synopsis*

## What, Why and How?

We humans are not the only gregarious and intelligent animals. But our kind of (ultra-)sociality is extraordinarily complex. The scope and scale of our coordination, cooperation and division of labor is unprecedented. We culturally elaborate complex foraging, technological, religious, moral and political practices. And we scaffold and teach our offspring to master and navigate them. Our intelligence keeps pace. We articulate and share our thoughts and choices in language. And we assess, justify and modify them in light of evidence, reasons, values or norms. No other terrestrial species does that.

The phenomenon of human *sapience,* as I shall conceive of it in this book, combines both these aspects of sociality and intelligence. But what is the relation between them?

One *prima facie* possibility is that our extraordinary intelligence explains our complex sociality. We are individually capable of feats that other animals are not capable of. We excel at causal analysis of the world.[1] Based on this we manufacture and manipulate sophisticated tools. We count and calculate. Last but not least, we systematically and productively talk, think and reason in sentences. Arguably, all this disposes us to flexibly come to terms with new challenges and opportunities arising in our rapidly changing environments, which we actively transform and engineer to begin with.

[1] Cf. Sloman and Fernbach (2017), Pearl and Mackenzie (2018).

Note, however, that in their human-unique form the aforementioned cognitive skills are culturally fine-tuned and learned. For example, other animals count in the sense of reliably discriminating quantities of up to three or four items.[2] We, too, are capable of this feat early in infancy. So this may be a biological design of Mother Nature. But only we elaborate and learn conventional systems of recursive counting. Mastery of such systems (practices) vastly expands our cognitive possibilities. Much the same holds for other mentioned skills shaped by Mother Culture. Unaided by them, our individual intelligence may be impressive, but it is arguably not nearly as impressive.[3] In the early phase of our development, we do not outperform other higher primates across cognitive domains.[4] Yet, what markedly differentiates us from early on is our cultural environment and the socially scaffolded development of our cognitive and agential skills. We depend on and learn a lot of our adaptive *know how* and *know that* from competent or knowledgeable others. A great deal of it prepares us to cope with the challenges and opportunities of life in environments transformed (often thoroughly) by our social-cultural activities. To keep pace with such transformations, occurring at a faster temporal scale than biological evolution, much of the relevant practical or theoretical knowledge must be transmitted through social learning and teaching. But our minds are not blank slates. Current research indicates that they are innately biased to process social stimuli (voices, faces, smiles, looks, etc.), which prepares us to interact, communicate with and learn from others.[5] Based on this we acquire and make use of various cultural-cognitive designs. And we eventually become capable of sophisticated feats across cognitive and problem-solving domains.

This suggests another possibility: our unique forms of intelligent behavior may reflect our specific social and communicative ways of life. To drive the point home, consider a distinctive mark of our kind of higher intelligence: we are capable of assessing and managing our views and doings in terms of their credentials and treating them as providing reasons for other things that we might believe or do. This trait does

---

[2] So-called subitization. Cf. Feigenson et al. (2004).

[3] Cf. Henrich (2016). Dennett (2017).

[4] Cf. Herrmann et al. (2007), Herrmann et al. (2009), Tomasello and Herrmann (2010), Wobber et al. (2014).

[5] Cf. Csibra and Gergely (2009), Tomasello et al. (2005), Tomasello (2019), Heyes (2018).

not seem to have parallels in the animal realm. Why is that? One intriguing suggestion is that we are so sensitive to reasons because we are the only creatures who take part in social practices of a unique kind. We take account of reasons for our thoughts (doings) when pressed or asked to do so by others in social-communicative interactions. Such activities and abilities are linked to communication in general and language in particular. Ranging from hunter-gatherers to civilized societies, they play a vital role in the lives of socially and cognitively interdependent beings that we are. It may be that primordial forms of assessment of thoughts (doings) in light of reasons co-evolved with linguistic communication to serve such functions, secondarily being co-opted also for private ratiocination.[6] This resonates with extant scientific views, according to which human *reason* is fundamentally a social skill to give and assess reasons.[7]

Robert Brandom and fellow theorists have elaborated a congenial idea from a philosophical perspective: our unique kind of intelligence is *discursive*, being rooted in competences to take part in intersubjective practices of giving, taking and asking for reasons, which consist of making, assessing, probing, defending and revising claims in the basic form of assertions.[8] This is considered the original form of our peculiar sensitivity and responsiveness to "the force of the better reason." Private (including purely internal) forms of taking account of reasons for (against) something actually presuppose and internalize those practices and abilities. Presumably, such rational practices and competences do not emerge *ex nihilo*. They build on more basic perceptual, cognitive and agential dispositions. But once in place, they afford a brand new mode of conceptual thinking and reasoning not available antecedently or independently. So, this can be interpreted as a transformative conception of human intelligence.

In my opinion, this approach (*aka* inferentialism) is a rich source of valuable insights into the nature of our rational capacities. But it is underdeveloped in important

---

[6] Natural languages, as cultural phenomena, could have evolved into their more complex forms in part to support increasingly complex social activities of this sort Cf. Lamm (2014), Chater and Oaksfoard (2020).

[7] Cf. Mercier and Sperber (2017), Tomasello (2014), Henriques (2011).

[8] Cf. Brandom (1994).

respects. Thus, its advocates have rarely been concerned to ask *why* or *how* human beings develop or acquire such abilities on phylogenetic or ontogenetic scales, based on what kind of social, communicative and cognitive skills. Brandom, for instance, is explicit that he aims to say what doing the "trick consists in" (i.e., what it takes to make norm-governed moves in a space of reasons), not how the trick is performed by or implemented in our minds.[9] Nor, for that matter, is he concerned to theorize, in a genealogical manner, why or how our forebears could have developed such a feat. Relatedly, little attempt has been made to assess the credentials of this approach in the light of scientific research on human communication, cognition or reasoning.

This is both a lacuna and a missed opportunity. First, this view of human rational capacities is bound to be incomplete if it ignores these questions. Second, it had better be consistent with empirical findings about relevant capacities. Third, scientific conceptions of the nature of our rational capacities may be incomplete or problematic. And philosophical analysis may provide resources to complement or correct them.

This book aims at partially filling this lacuna. Approaching those neglected questions in a naturalistic spirit, I develop this view of human rational capacities in new and hopefully fruitful directions. The question unifying all the chapters included in the book is *why* and *how* socially and cognitively interdependent human beings could have elaborated the "trick," what kind of skills are required for it and how they develop across ontogeny. To address it, I bring to bear the philosophical method of pragmatic genealogy to reconstruct the *raison d'être* and constitution of the core discursive-rational practices and capacities. And I pay close attention to the cutting-edge scientific research on the origin, function and ontogeny of human social-cognitive and reasoning capacities. By engaging philosophical and scientific approaches in a cross-fertilizing dialogue, I aim to show how we can gain a better understanding of human rational capacities by comparing their respective strengths and weaknesses. In this vein, I critically revisit and constructively develop central themes resurfacing in

[9] Brandom (2010, p. 306).

the work of Brandom and other prominent "language rationalists"[10]: the nature of the assertoric practice and its connection to reasoned discourse, the linguistic elaboration of the space of reasons, the social nature of reasoning, the intersubjective roots of social-normative practices and the nature of objective thought.

To my knowledge, there is no book that covers the same ground from this perspective. But I should say that I have no ambition (nor faith enough) to re-conceptualize in this vein some philosophical system as a whole. The philosophical view of human rational capacities as I broadly characterized it can be explored and developed in this promising naturalistic direction in a problem-based manner, often independently of other theoretical commitments also associated with it. In particular, intriguing proposals regarding the social origin and normative structure of human discursive practices and abilities are often interesting independently of a specific version of the inferential-role semantics advocated by Brandom and others. Don't get me wrong. I do think there is something to be said for the inferentialist approach to semantics as a viable alternative or complement to mainstream approaches based on referential relations and truth-conditions. But in this book, I do not argue in detail in its favor, though I do mention considerations motivating it where this serves my goals.

In the following overview of the book I detail the issues to be addressed in corresponding chapters.

## Overview

### Part I *Moving in the Space of Reasons*

Making and assessing claims in light of reasons is a core rational practice involving performances (assertings) worth classifying as basic moves in a space of reasons. It is also a social-communicative practice about which we may ask why and how it could have been elaborated by socially and cognitively interdependent beings that we humans are. In the first part of the book I focus on these questions and I bring to bear the method of pragmatic genealogy to propose and substantiate answers to these questions.

---

[10] Following Bar-On (2019), I have in mind thinkers, including Wilfrid Sellars, Donald Davidson, Michael Dummett or John McDowell, who emphasize that distinctively human rational capacities are actualized in flexible conceptual-propositional thinking and reasoning that is enabled by language.

In Chapter 1 (*Asserting: A Pragmatic Genealogy*) I revisit in this spirit the issue of the nature of the assertoric practice, because making claims in the form of assertions is a core rational practice. Assuming it is a practice characterized by internal norms of sorts, I distinguish three prominent *normativist* accounts. I submit that so-called *dialectical accounts* offer an attractive account of assertings as communicative performances intimately linked to a larger practice of reasoned discourse. The idea is that the assertoric practice is a social institution regulating communicative exchange of information, which comes into being when speakers treat one another as incurring certain commitments and entitlements. In Brandom's version[11], sayings count as assertings if they are treated as effecting characteristic changes in the normative standing of both producers and consumers: producers incur the commitment to vindicate what they say should they be appropriately challenged, and consumers are entitled to accept, re-assert and use the claims made in their own reasoning.

That said, advocates of dialectical approaches have rarely asked about the *raison d'être* of such a practice: what characteristic function it could have fulfilled in the lives of human beings with certain general needs and capacities that could explain why those beings could have elaborated it. I address this challenge by reconstructing a pragmatic genealogy of the assertoric practice. Taking inspiration from the "state of nature epistemology," I describe a hypothetical *discursive state of nature* inhabited by socially and cognitively interdependent beings who stand to benefit from coordination, cooperation and communication. I reconstruct why and how they could be under pressure to elaborate a communicative practice with the design features that dialectical accounts attribute to assertings. The core idea draws on the proposal of Huw Price.[12] Reasoned discourse would offer them a way of coordinating their verbal dispositions when they are incompatible, which creates a pressure on them to justify or argue their sayings and the space for learning from others, pooling information or collective deliberation. Based on this, then, I show how that account can accommodate a number of characteristic features - social, normative, epistemic - that assertions might be claimed to have.

---

[11] Brandom (1983), (1994), (2000).

[12] Price (2011).

In Chapter 2 (*Articulating a Space of Reasons*) I subject to critical scrutiny one specific article of the inferentialist faith, which goes beyond the dialectical account of assertings. The core inferentialist tenet is that sayings come to express determinate propositional claims only when a complex system of inferential and incompatibility relations is forged between them. As Brandom elaborates it[13], such a system is ultimately forged by normative attitudes of speakers playing a basic game of giving and asking for reasons. A minimal system is supposed to involve only prelogical sentences in material inferential and incompatibility relations. And it contains only assertional utterances of such sentences, which also fulfill the role of requests for reasons, when treated as incompatible with target assertions. A working model of such a practice is Brandom's idealized "Sprachspiel" played by speakers who utter such sentences and, based on this, mutually attribute and keep track of assertional and inferential commitments and entitlements. Of course, it is recognized by Brandom and fellow inferentialists that our languages are logically structured. But logical structure is not required for the basic space of reasons. Rather, it is accounted for as a latecomer to be elaborated to fulfill a specific expressive need or function: i.e., to explicitly express (discuss, assess, negotiate) inferential relations that already implicitly structure prelogical practices of making and arguing from and to claims.

This is the so-called *layer-cake picture* of conceptual-linguistic practices. It is a problematic picture, however. John McDowell articulated one critique of the layer-cake picture.[14] Its gist is that discoursing beings capable of expressing and consuming determinate claims must have a self-conscious grip on the space of reasons; but without logical devices, McDowell submits, they cannot have it. This critique is suggestive but inconclusive at best, as the subsequent exchange with Brandom reveals. I propose to shed a new light on the issue from a genealogical perspective again. I argue that if imaginary ancestral speakers—whose pragmatic repertoire is initially restricted only to moves of Brandom's "Sprachspiel"—are to practically assess one another utterances in terms of inferential and incompatibility relations, they will need to make it manifest to each other what utterances they reject and what inferences they endorse and reject, respectively. Such critters, I next argue, will likely be pressed to

[13] Brandom (1994, chapter 4).

[14] McDowell (2008)

elaborate certain dialectical devices (including denial) to this end, whose function will be partly expressive (of attitudes) and partly constitutive (of inferential roles). This suggests a *via media* between Brandom and McDowell, which invites us to rethink also the role of logic, broadly conceived, as serving both expressive and coordinative functions.

## Part II *The Nature of Reasoning*

In the second part of the book I examine and elaborate the idea that human reasoning is primarily a competence to assess and give reasons for claims in the context of interpersonal argumentation and/or justification. Though, secondarily, it is co-opted also for individual ratiocination (including in *foro interno*). Brandom and fellow inferentialists have offered a distinctive philosophical elaboration of this idea. Congenial yet more empirically oriented approaches have recently been developed by cognitive scientists, especially by Hugo Mercier, Dan Sperber and Michael Tomasello.[15] I hope to show that a comparison of the conceptual and empirical strengths and weaknesses of these approaches can yield a more balanced picture of human reasoning.

In Chapter 3 (*Reasoning: An Interactionist Approach*) I focus on Mercier and Sperber's interactionist approach. According to them, reason is a uniquely human capacity to produce or assess reasons for or against something. But they oppose the traditional, "intellectualist" view that its *raison d'être* is to improve individual cognition or decisions. They do not deny that we make use of reason in individual ratiocination or decision-making. But these are derivative uses, according to them, for which human reason was not originally designed or fine-tuned. Indeed, drawing on considerable empirical evidence, Mercier and Sperber argue that reason performs rather sub-optimally when put to its individual uses, whereas it performs comparatively well in its social uses. This seems to favor the view that reason is primarily a tool for social interaction. At the ultimate level, they hypothesize that reason evolved, via the standard process of natural selection, primarily to serve interpersonal argumentation and justification—practices which could have proved adaptive in hypersocial niches of our ancestors increasingly depending on cooperation and communication. At the proximate level, it recruits a cognitive ability to

[15] Mercier and Sperber (2011), (2017), Tomasello (2014).

metarepresent something as a supporting reason for something else. Indeed, Mercier and Sperber hypothesize that there is an intuitive reason module dedicated to inferring such metarepresentations. I am in sympathy with the big picture of Mercier and Sperber: human reason is originally and primarily an adaptive social competence to justify or argue. But I find their other main tenets somewhat less convincing. In particular, I shall argue that their specific modularist and adaptationist hypotheses are problematic. From a more philosophical point of view, then, I shall articulate three *prima facie* problems with their metarepresentational account: the oversophistication problem, the specter of vicious regress and the problem of the cognitive role of reasons, including their "directive" role in person-level processes of making up and changing our views. I conclude that we should theorize person-level reasoning in a different way.

Chapter 4 (*Reason as Giving and Asking for Reasons*) is a follow-up in which I argue that the inferentialist approach to reasoning in terms of the skills to give, take and ask for reasons may be a way to go. My diagnosis of the problems with Mercier and Sperber`s account is that their common denominator is the assumption that reasoning requires (meta-)representing reasons *as such*. I show that the inferentialist approach avoids the problems precisely because it dispenses with that assumption. On the other hand, I note that the ultimate question of "Why do we reason?" is barely scratched by its proponents. Following the hints made in Chapter 1, I outline how inferentialists could approach it, whilst drawing on Mercier and Sperber's account (and similar naturalistic approaches) as a rich source of congenial ideas. Finally, I address the worry that the two approaches being compared offer too individualistic models of the game of giving and asking for reasons that fail to do justice to the cooperative nature of human reasoning. I specifically focus on Michael Tomasello's articulation of this worry.[16] Tomasello's view is that reasoning evolved primarily to facilitate cooperative decision-making (or problem-solving), which require common goals, thus collective intentionality of sorts. I argue that Tomasello's view might go too far in the collectivist direction and conclude that a more plausible reconstruction should appreciate various interactive contexts, uses and functions of human reasoning.

[16] Cf. Tomasello (2014, chapter 4).

## Part III *From Intersubjectivity to Objective Thought*

In the concluding part of the book, I focus on human rational capacities from a developmental point of view. I frame the issue by noting that the views of inferentialists and other language rationalists are psychologically underdeveloped: they don't (care to) offer a plausible account of the mindset required to develop and take part in human practices of reason. Here, again, we are well advised to pay attention to current advances in relevant scientific disciplines. Particularly promising in this respect is the ambitious approach developed by the eminent psychologist Michael Tomasello.[17] He aims to conceptually elaborate and empirically support the hypothesis that human cognition is uniquely social-cooperative due to species-specific dispositions to "share intentionality" (attention, goals, etc.). He proposes that their development is mediated by specific forms of intersubjective interactions and literally transforms human cognitive and communicative capacities. Based on this, he aims to provide a psychologically nuanced account of collective and linguistic practices, which provide the setting for objective-reflective modes of thought. In this way, Tomasello's approach promises to fill the yawning gaps left open by language rationalists.

In Chapter 5 (*Shared World: Intersubjective Foundations*) I examine whether Tomasello fulfills this promise. I specifically focus on his views on joint intentionality as a package of intermediate social-cognitive skills regulating preverbal social interaction and communication and paving the way to social-normative practices, linguistic communication and higher-level forms of objective-propositional thinking and reflective reasoning. Here Tomasello's groundbreaking experimental research highlights the critical role of early intersubjective—attentional, intentional, communicative—activities in the development of ever more complex forms of cognition and agency. Though I find it promising, I argue that the empirical data should be interpreted cautiously if the developmental approach is to deliver its intended fruits. We should be wary not to oversophisticate the intermediate intersubjective infrastructure or we may end up presupposing the kind of skills that need to be illuminated in the first place. And I am concerned that Tomasello leans towards cognitively "thick" accounts of the social-cognitive activities of infralinguals in terms

[17] Tomasello (2008), (2014), (2019).

of robust mentalizing skills. This does not sit well with his goal of providing a developmentally plausible account of the basic psychological infrastructure. In the course of developing this critique, I attempt to make good the claim that interpretations intermediate between too lean (in terms of agents' understanding something about behavior divested of any mentality) and too rich (in terms of agents' rich mentalizing abilities) are best suited to serve the developmental approach. But once this is appreciated, I conclude, Tomasello's framework can still be mined as a rich source of insights into the development of our rational capacities that come into being with language-mediated social-normative practices.

In Chapter 6 (*Objective Thought*) I zoom in on more self-conscious modes of human thinking. My point of departure here is the observation that prominent language rationalists and Tomasello stress similar features of "objective" thought. The common ground between them is that the idea (sense or notion) of objective correctness emerges in the setting of a linguistic triangulation of sorts. I capitalize on this interesting overlap to explore what lessons we can learn about objective thought by comparing the two theoretical perspectives. The views of Davidson and Brandom are picked out as two fruitful foci of comparison with Tomasello.[18] Both thinkers argue on conceptual grounds that objective thought requires intersubjective interpretation of verbal responses as correct under certain conditions and incorrect under others. Davidson's considerations about interpretive keying of verbal responses to a shared world as a condition of the possibility of objective thought serve as a natural point of departure, as they bring into sharper relief important commonalities and differences. Brandom's views develop Davidson's promissory idea within his social-pragmatist framework, which stresses the social-perspectival structure of discursive triangulation. Tomasello provides a more empirical perspective on objective thought as rooted in the abilities to take and coordinate perspectives.

Exploring this common ground as well as differences, I argue that Tomasello is right to stress that prelinguistic triangulation already opens up the shared world. Yet, prelinguistic triangulation falls short of establishing a grasp of the contrast between the subjective and objective embodied in the notion of belief, which is required for objective thought. At this juncture, I note that Tomasello's account of the development

[18] Davidson (2001), Brandom (1994).

of that grasp via taking part in forms of *perspective-shifting discourse* has affinities to Brandom's account of objectivity as a feature of the *social-perspectival* interpretation of moves in the game of giving and asking for reasons. Tomasello specific hypothesis is that *exchanges of opposed views* on some subject matter facilitate the development, because they provide affordances to register and coordinate conflicting perspectives on the shared world. I find this hypothesis promising, up to a point. But I argue that a full grasp of objectivity as pertaining to the basic domain of empirical discourse or thought requires that one also understands that no perspective is privileged by default, and each is, in principle, fallible. And this grasp, I propose, may require participation in simple *games of giving and asking for reasons*. I conclude by pointing out how this proposal fits the views developed in previous chapters. By critically comparing and coordinating these theoretical perspectives, I hope to motivate an alternative account of the nature and emergence of objective thought that accommodates vital aspects of each.

# Part I
# *Moving in the Space of Reasons*

# Chapter 1

## *Asserting: A Pragmatic Genealogy*

### 1. Introduction

Assertions are the kind of linguistic performances in or by which we make and justify claims or views. And making and assessing claims in light of reasons is a hallmark of human sapience. We articulate our observations and more abstract or theoretical views about factual issues in claims apt to be assessed as true or false. Our rational policies consist in large part in articulating, examining and supporting claims, including by comparing them with other claims expressing alternative views. This explains why *assertions* have been paid special attention in modern linguistic philosophy. After all, a good deal of philosophizing consists in making, examining and defending assertions.

In the golden age of philosophy of language, a lot of ink was spilled over the issue of how to understand the assertoric force with which a sentence has to be uttered for the performance to count as the act of asserting something. Some very prominent debaters argued that it is a matter of a sociolinguistic convention of sorts: as a default, speakers' utterances of declarative sentences count as assertoric (though there are circumstances under which the default can be cancelled; e.g., when an actor is speaking

on a stage).[1] No less prominent debaters disagreed and argued that it is a matter of communicative intents of sorts or of presenting oneself as holding something true.[2]

A more recent and in certain respects overlapping debate focuses on the issue of whether – and if so, in what sense - assertion is a linguistic practice characterized by norms or rules of its own. Those who think so often draw an analogy with *games*.[3] Different games are constituted by different sets of rules that differentiate them from others. By analogy, our assertoric practice may be governed by certain norms, and this fact may distinguish it from other linguistic or non-linguistic practices. Opponents of this view do not deny that assertions are subject to norms; but they argue that those norms are not specific to assertions *qua* assertions and/or that they are not constitutive rules.[4] Rather, like other intentional performances or actions - whether linguistic or not – assertions can be assessed by standards of prudence, rationality, propriety or morality. Or they may be subject to norms governing cooperative conversation more generally, because paradigmatic assertions are communicative contributions to conversation.

The debate continues unabated. To put my own cards on the table, I find the analogy with rule-governed games illuminating.[5] Up to a point at least. But my objective in this chapter is not to take issue with antinormativists. Rather, assuming that the analogy holds promise, I attempt to shed fresh light on it from a new perspective.

I start by clarifying what, in general, the idea of a normative practice plausibly involves, and I apply that analysis to the particular case of assertion. Based on this, I introduce three main elaborations of the idea: Correctness Rules Accounts, Liability Accounts and Dialectical Accounts.[6] Of these, I explain, only Dialectical Accounts

---

[1] Cf. Austin (1962), Dummett (1981).

[2] Cf. Grice (1989), Strawson (1964), Davidson (1984).

[3] Cf. Rescorla (2009b, p. 99).

[4] Cf. Pagin (2004), (2016), Maitra (2010).

[5] See various essays in Brown and Cappelen (2011).

[6] Compare McFarlane (2011) and Shapiro (2020).

explicate assertings in terms of their normative contributions to a larger practice of *reasoned discourse*. Assertings are understood with an eye to norms that pertain to their role in that larger practice: namely as communicative acts of making claims that potentially license other claims and for which the question potentially arises as to what licenses them, which is answerable by making yet other claims speaking in their favor. The best-known dialectical account in this spirit is by Robert Brandom.[7] According to Brandom, assertings are the kind of linguistic utterances that provide reasons for other claims or performances and potentially stand in need of reasons themselves. He explicates this in terms of commitments and entitlements that speakers incur and license, respectively, in the course of discoursing. Roughly, by the norms of the game, one who asserts that *p* commits oneself to vindicate or defend the claim made when properly challenged (or else to retract it) and entitles others to endorse and rely on that claim based on one's authority. As Brandom also puts it, to assert is to incur a hybrid social-normative status involving *authority* backed up by vindicatory *responsibility*.

Myself, I think that dialectical approaches are right to forge the link between assertings and reasoned discourse. But I won't offer any special arguments to convince those who might disagree, other than pointing out that an imaginary communicative practice involving performances not embedded in reasoned discourse appears to lack core (and not just peripheral) features of our own full-blown claim-making practice. Even if this test fails to convince my reader, he or she may still find it worthwhile to explore with me the interface between assertion and reasoned discourse. Thus, I may be read as pursuing a conditional strategy. In particular, assuming an intimate link between the assertoric practice and reasoned discourse, my main aim in the following is to illuminate that link from a particular perspective of *pragmatic genealogy*. This philosophical method has been used to shed light on other human phenomena.[8] It models, in an abstract/idealized style, a fictitious state of nature inhabited by human beings who have certain general human needs and abilities and depend on coordination and cooperation, including sharing information via communication. It then identifies

[7] Brandom (1983), (1994), (2000). See also McFarlane (2005), (2011) and Rescorla (2009b).

[8] The *locus classicus* is Craig's (1990) genealogy of the concept of knowledge from the state of nature. See also Williams (2002).

a particular urgency - a kind of selective pressure - that such creatures are likely to confront in the state of nature. Finally, it reconstructs why and how some typically human practice could have been elaborated by them to saturate it. Specifically, then, I will describe a *discursive state of nature*, asking why and how its inhabitants could have adopted a communicative practice involving performances playing the dual role within reasoned discourse. In the course of answering these questions, I hope to show why and how they could have eventually elaborated a social practice that has design features that fit well the dialectical account of asserting outlined by Brandom. I conclude by showing that and how it can accommodate various features of assertings that have been claimed to characterize them.

## 2. Assertoric Practice: A Normativist Perspective

Assertion, it is often noted, can be assessed along a number of different normative dimensions. After all, paradigmatic assertions are intentional acts or performances and as such they are subject to various norms of both theoretical and practical rationality, as well as subject to conventions of propriety or norms of morality. Thus we might say that one ought not to have asserted something, because it was irrelevant, misleading, deceptive, impolite or offensive. This, though, is true of performances of many kinds, which might or might not be constituted by norms or rules of sorts. If we want to make good the claim that assertion is in a deeper sense normative practice, we have to dig deeper.

To begin with, it will be helpful to have some idea of what it could mean to say that a performance belongs to a normative practice. Mark Rescorla offers the following useful hint:

> Any practice engenders a three-fold division between actions that do not count as engaging in the practice, actions that count as engaging in it correctly, and actions that count as engaging in it incorrectly. (Rescorla, 2009b, p. 101)

Rescorla contrasts practices, so conceived, with *mere activities*. The latter are subject to *constitutive requirements* that an agent must satisfy to count as performing that kind of activity. Moreover, they may be subject to (regulated by) general norms or rules that are not specific to them (especially if they exemplify intentional activities). But there are no internal norms that set up standards of when they are performed properly

or improperly. Consider the activity of scratching one's head with one's hand. To perform this kind of activity, one must move one's hand to touch one's head; and one must do certain other things as well. Once one has performed the activity, there is no further question of one's performing it properly or improperly. I may scratch my head with my hand more or less skillfully or effectively. But this is a far cry from saying that there is a norm such that I can be said to be doing that kind of thing properly or not. In other words, there seems to be no norm internal to the activity of scratching one's head that one must observe in order to grasp what it is to scratch one's head. By contrast, this dimension is essential to practices. Consider the tango. Because "it takes two to tango," individual actions do not count as engaging in tangoing. Even when two agents are doing something together, they mostly do something that does not count as tangoing. Only certain kinds of doings (characteristic steps, figures, etc.) in certain kinds of situations qualify as engaging in tangoing. Crucially, those doings that do qualify can be performed correctly or incorrectly. Skilled tangoers or jurors can recognize and assess them as such. This indicates that there are standards that one should follow to tango properly. Such standards apply specifically to performances *qua* instances of tangoing, rather than applying to them as examples of activities that are subject to more general norms of rationality, propriety, morality, or whatever. When dancers do something that is not in accordance with a standard internal to this practice, they are still dancing tango together, albeit less than properly (so jurors would lower their final grade).[9]

Applying this to the case of assertion, we get the following picture. (1) Certain norms are internal to the assertoric practice or to a larger practice involving it (e.g., reasoned discourse). They determine proprieties of assertional performances in light of which they can be assessed and eventually blamed or criticized. By the same token, performances within the practice are regulated or constrained by such internal norms.[10]

[9] Though the demarcation line between *dancing tango incorrectly* and *not dancing tango at all* is fuzzy – especially in the case of amateurs or novices to the practice who are in the process of learning the skill.

[10] Thus, one might be criticized for having made an assertion that is improper as assertion, though one's performance satisfies other normative requirements (e.g., of prudence, etiquette or morality) external to the practice. And the other way round, one might have made an assertion that is in order as assertion,

It is also natural to think of such norms as determining specific normative statuses: obligations/commitments and/or permissions/entitlements. Importantly, such internal normative requirements differ from constitutive requirements (of activities): assertings failing to satisfy the former are still assertings.[11] (2) Such norms characterize the assertoric practice as such (and distinguish it from other practices). Indeed, unless one appreciates (being at least implicitly sensitive and responsive to) them, one is not a genuine practitioner (assertor). In all, the idea is that the assertoric practice cannot be understood for what it is without giving account of its normative structure.

Please note that I do not mean to imply any "essentialist" claims here. For all I say, a practice (*P*) may be a contingent and evolving structure, as may be its norms or rules (think of evolving games of sport, say).[12] Up to a point at least. For it may well be that some constitutive requirements as well as norms of *P* (perhaps deriving from its characteristic goal or point) may form the core of our notion of *P* so that to imagine a stripped-down practice lacking them may be to imagine something no longer recognizable as a version of *P*. Relatedly, even if norms depend for their existence and force on activities or attitudes of human beings, that does not mean that all norms are mere arbitrary conventions (not even when there is a range of alternatives). The purpose or function of human activities, reflecting the needs and capacities of human beings, may constrain a range of norms that might govern them. Perhaps all human societies maintain certain practices governed by certain salient and resilient norms;

---

though one's performance might be rightly criticized for having violated other normative requirements external to the practice. External normative requirements might or might not overrule internal ones.

[11] One may wonder whether, on the account preferred here, the analogy between the assertoric practice and rule-governed games typified by chess is still promising. If one chess player moves the king contrary to what the rules of chess permit, are we to say that the player has made an *incorrect* chess move? Or are we to say, rather, that he failed to make a *chess* move at all? Here, intuitions may pull in opposite directions. In view of such – partially "semantic" - concerns, a better analogy could be with games like football, in which violations of rules (e.g., a foul) count as "illegal" ways of playing the game, usually being followed by penalties of sorts (e.g., a free kick), if registered by a referee. Such moves are still moves (if moves against "fair play") in the football game – just like incorrect assertions still count as assertions.

[12] I argued this point in Koreň (2012). For a recent discussion see Simion and Kelp (2019).

indeed, assuming very general human concerns and capacities, we can see them as universal solutions to similar structural situations (opportunities and challenges) that humans face across time and space. Our assertoric practice may be of this sort.

## 3. Three Normative Accounts of Asserting

With this in place, we can distinguish three extant accounts of the assertoric practice in this spirit: *Correctness Rule Accounts*, *Liability Accounts* and *Dialectical Accounts*.[13] All of them stress that some kind of *responsibility* for it being the case that *p* is incurred or undertaken by one who asserts that *p*. But they specify it differently.

Correctness Rule Accounts maintain that the speech act of asserting something is distinguished (from other speech acts) by being subject to a constitutive rule:

One must (should): assert that *p* only if C(*p*).

Different proponents of this approach specify the condition *C* differently. The most influential proposal is that *C* requires that one know that *p*. But it is also controversial, and other theorists have argued that something less than knowledge will do. Perhaps C requires that one have (good) reasons or warrant to believe that *p*. Or perhaps it requires, quite simply, that *p* be true.[14] Be that as it may, responsibility for it being the case that *p* may be a feature accounted for as follows. Assertor undertakes it because

[13] Cf. Shapiro (2020) and MacFarlane (2011).

[14] Among others, Unger (1975), Williamson (1996), DeRose (2002), and Hawthorne (2004) favor *knowledge*; Lackey (2008), Kvanvig (2011), Douven (2011) and McKinnon (2013) favor *credibility, reasonableness*, *justified belief* or *warrant* of sorts; and Weiner (2005) and Whitting (2012) argue for *truth*. These are the three most popular alternatives. In principle, a pluralist might hold that assertions are uniquely subject to a unique package of rules of the sort specified above. That said, the usual strategy has been to propose that assertion is the unique speech act subject to one constitutive rule, and then to argue that other putative candidates can be explained as derived from one's preferred rule and/or from rules not specific to assertion. For instance, the *knowledge rule* is a strong one and implies the *truth rule*. Taking it to be the constitutive rule, one may account for the latter dimension of appraisal, too, in addition to other phenomena (various conversational patterns, the lottery paradox, Moore's paradox; cf. Williamson 1996, 2000). On the other hand, the weaker *truth rule* or *reasonable belief rule* do not imply the *knowledge rule*. But perhaps this is not their "weakness," if the latter rule is too demanding. Such rules may account (perhaps more plausibly) for the same range of phenomena (even new ones) when combined with considerations not specific to the practice of assertion (e.g., rules of conversation).

assertings are subject to the constitutive rule according to which they are incorrect unless one knows that *p* is true, or unless one has reasons to believe that *p* is true, or unless *p* is true. The idea is that in uttering a (declarative) sentence "*p*" one subjects himself to the rule, thereby undertaking responsibility for the truth of what he asserts.

Liability and Dialectical Accounts do not characterize assertings in terms of such categorical restrictions on what is correctly assertible. Rather, assertings are characterized in terms of undertaking specific normative statuses that remain in force until one withdraws the assertion. Possession of such statuses is also not a matter of being in certain mental states, so they do not characterize assertings in terms of expression of such states, either. The common ground between them is that in asserting *p* one counts as undertaking a commitment to it being the case that *p* that may be honored or violated. This commitment to (or responsibility for) it being the case that *p* reflects the social-communicative dimension of assertings without which there would be no point in undertaking or discharging it. However, the two accounts unpack the commitment differently.

According to Liability Accounts, to be committed to it being the case that *p* is to be accountable and liable to bad consequences (including loss of credibility and other sanctions) in the event *p* is revealed untrue (and the original act is not excusable).[15] An analogy with the social act of promising can help clarify the idea. When X promises to repair Y's car by the end of the week, they establish a social-normative relation: X licenses Y to rely on his word (to make plans for the next week), being accountable and liable to criticism and sanctions if he fails (without proper excuse) to fulfill the promise. By analogy, when X asserts that Y's car has been repaired, X licenses Y to rely on this as a matter of fact, this being backed up by X's accountability and liability to criticism and sanctions if it turns out not to be the case

[15] Liability Accounts are often traced back to Peirce (1958, 2.315). Elements or versions of it can be found in Searle (1969), Watson (2004) or Greene (2009). Alston formulates the core idea in a particularly clear way: "A speaker takes responsibility for *p* if the speaker "knowingly took on the liability to (laid herself open to) blame (censure, reproach, being taken to task, being called to account), in case of *not-p*" (Alston, 2000, p. 55). Plus, one must also explicitly say that *p* in order to assert that *p* (Ibid., p. 120). That said, Alston ultimately endorses a Correctness Rule Account of the source of undertaken responsibility for it being the case that *p*.

(and X does not have any acceptable excuse).

The aspect of authorization and liability to criticism is shared by Dialectical Accounts. In them, however, the commitment to it being the case that *p* is specified as a commitment to appropriately respond in certain ways to potential challenges or queries of interlocutors. In Brandom's particular version, one who asserts that *p* both endorses *p* and undertakes responsibility to vindicate or defend the claim put forward when it is *appropriately* challenged.[16] Accordingly, assertion is assessable as proper or improper with a view to discharging such a vindicatory responsibility.[17]

I intimated right at the outset that Dialectical Accounts may be favored over competitors *if* one thinks that their contribution or role in reasoned exchanges is their "design" (characteristic, core) feature and not just a "derived" (optional, peripheral) feature. I also said that I shall not specifically argue for this supposition, although I find it quite appealing. Assuming it, here are some considerations in support of the consequent.

Correctness Rule Accounts are certainly not wrong to point out that assertions are supposed to be true, knowledgeable or justified and that assertors can be criticized if failing to live up to such expectations (though other considerations may exculpate them). Nevertheless, they do not directly elucidate what one is doing when one asserts something. In particular, most formulations of constitutive rules currently on offer do little to capture their social significance in general and the link to reasoned discourse in particular. Of course, it is allowed that the assertoric practice and its constitutive rules are social. Yet, nothing about the candidate rules indicates that obligations or permissions supposed to follow from them have something intimate to do with the fact that assertings are typically social performances with a specific role or function. If super-intelligent extra-terrestrials (in the position of radical interpreters) were offered

[16] Brandom (1983), (1994). See also MacFarlane (2005). Different elaborations are possible. Perhaps asserting obliges one to respond to *any* query or challenge by interlocutors (not just to appropriate challenges). Cf. Rescorla (2009a). Much also depends on how one conceives of the form that possible challenges and responses might take and the conditions under which retractions are called for. Cf. Shapiro (2020).

[17] Here I am indebted to Shapiro's (2020) discussion.

a candidate constitutive rule and could translate it, they could not infer from it alone anything about that dimension. Indeed, they would not know what use to make of the kind of doings labeled as assertions.[18] Admittedly, Correctness Rule Accounts can be elaborated to the effect that assertings serve the communicative function of trading information, pooling knowledge or imparting true beliefs. They could say that norms governing them reflect and stabilize this communicative function. Something like this idea is usually driving Correctness Rule Accounts. Even so, one could think that this should be somehow reflected in the formulation of relevant rules themselves. At any rate, Correctness Rule Accounts abstract assertings and their norms from the specific communicative context of reasoned discourse, suggesting that their contribution or role in reasoned exchanges with interlocutors is at best their "derived" but not "design" feature.

By contrast, Liability Accounts are formulated with an eye to capturing the social dimension and related normative features of assertings. However, they also do not directly capture the dual role of assertings in reasoned discourse. Whilst they may imply something about their role as vouchers licensing others to rely on or defer to them, they do not require that such vouchers be backed up by justificatory responsibility. Nor do they easily lend themselves to accommodating such a requirement. Sometimes their advocates maintain that it is a derived commitment to give supporting reasons on pain of compromising one's credibility. However, it is not clear why, on this account, assertor couldn't maintain face simply by attempting to neutralize claims or challenges of interlocutors to the effect that his claim is false, whilst ignoring requests for reasons speaking positively in favor of his claim. And if one's intuition is that the latter is indeed required, this may be because the requirement is primary, rather than derived.[19]

---

[18] A related point, I take it, was made by MacFarlane (2011, pp. 86-87). He notes that the notion if *assertion* is already taken for granted in Correctness Rule Accounts, so assertings are individuated independently of the candidate constitutive rule. This raises the question of why such rules should be called "constitutive" in the first place (rather than "regulative") and whether, indeed, they can deliver their promised theoretical fruits.

[19] Shapiro (2020) raises this objection.

At any rate, it might be felt that the kind of responsibility that is at issue in asserting *p* involves by default, rather than derivatively, a commitment to account for oneself when one is queried or challenged by giving reasons for *p* or otherwise vindicating the claim. Or else one should retract one's assertion. Neither Correctness Rules Accounts nor Liability Accounts seem to do justice to this. By contrast, Dialectical Accounts tell us something about what it is that one is (treated as) doing in asserting something: about its social-normative significance within reasoned discourse. They do so by shedding light on a specific kind of responsibility undertaken in asserting something, introducing dialectical obligations to defend asserted claims when challenged. I shall have more to say on this in due course. On that occasion, I will explain that and how a properly motivated dialectical approach can accommodate some intuitions or desiderata driving the competitors. But now to the main task.

## 4. A Pragmatic Genealogy of Asserting

If assertion is a normative practice, two questions may be asked about it. First, what kind of normative structure distinguishes our assertional practice? Second, what is the point or function of a social-linguistic practice or institution that has that kind of structure? What specific role does it play in human social intercourse such that it explains its existence and characteristic (social, normative and epistemic) features? The usual approach in the literature is to address only the first question.[20] I propose that a fruitful approach might be to ask the second question also. After all, one way to understand the nature of some trait X is to ask what X is (good) for in the behavioral economy of creatures possessing or exhibiting it: what function it fulfills in it or what role it plays. And one way of doing so is to inquire into why and how X could have emerged and developed into its current form, reflecting plausible needs, goals and abilities of natural creatures inhabiting a certain natural or social niche (or form of life).

[20] Price (1988), (2011) is one notable exception. Williams (2002) is another, though he is primarily concerned not to illuminate assertion as such but, rather, the virtues of truthfulness ("accuracy" and "sincerity") that pertain to it. Recently, "function-first" approaches to assertion have been developed with an eye to accounting also for its normative dimension. Cf. Kelp (2018), Simion and Kelp (2020), Graham (2020).

Approaches in this spirit are alive and well in evolutionary branches of biology, psychology and anthropology. They are called conjectural or natural histories or, often derogatively, "just-so stories." For some distinctively human phenomena – e.g., political authority, property, morality, truthfulness, epistemic practices or virtues - several philosophers developed intriguing genealogies, too. Some of them could have thought that their narratives were more or less factually accurate. More often than not, however, they were conceived as illuminating, if fictitious, genealogies or rational reconstructions of the phenomenon at hand, which do not aspire to describe its *de facto* genesis.

One promising approach in this vein is pragmatic genealogy.[21] The *locus classicus* is Edward Craig's attempt to shed light on the *raison d´ être* and design features of our concept of *knowledge*.[22] As I shall loosely draw on it as a model for my own pragmatic genealogy of the assertoric practice, I have to something about it first.

### *4.1 Model: Craig`s pragmatic genealogy of knowledge*

Craig's genealogy is "fictitious" in that it does not aim to reconstruct the genesis of the concept of knowledge from a real historical or pre-historical state of humans. But it is not a product of unleashed speculation, either. Craig invites us to imagine a community of simple human beings with certain very general needs and capacities that can be considered human universals. We can assume that, on average, reliable information helps them to more flexibly cope with opportunities or challenges upon which their survival, thriving and reproduction is predicated. They are also equipped with on-board sources of such information: sensory organs, memory, inferential processes and a modicum of metacognition (e.g., registering their cognitive limits, including in comparison with their peers). We can also assume that they are modestly sociable: disposed to coordinate and cooperate to promote their natural needs or ends. And they can communicate (report, tell) about past, present or future goings-on. At some point, Craig submits, such creatures will face a basic cognitive challenge or problem, whose solution would be of significant value to them. And he undertakes to show why and how such creatures could have solved the problem by rationally

[21] Cf. Queloz (2020) on the method of pragmatic genealogy.

[22] Craig (1990).

elaborating (though not necessarily via self-conscious reasoning) a conceptual-linguistic practice that reasonably well resembles our own practice involving the concept of knowledge. Craig's narrative thus promises to shed light on the function or point of our epistemic practices that centrally involve our concept of knowledge (or cognates).

Craig's "state of nature" (henceforth SN) models that predicament. On the one hand, valuable information available to each individual in SN is seriously limited if each relies just on his own on-board cognitive sources (what one perceives, recalls and infers from such information). On the other hand, due to the division of cognitive labor, others might possess valuable information that the individual does not have access to. Foraging in a dense forest, X might not be in a favorable position to tell whether he is safe from predators or hostile neighbors. Being on watch atop a nearby tree, Y may be in a position to accomplish just that. Obviously, X (as inquirer who is interested to settle the issue) potentially stands to benefit from Y (as informant) telling or otherwise indicating to X whether he is in danger. This explains *why* inhabitants of SN have a strong incentive to gather information from others. Yet this does not answer the question of *how* they could have solved the problem. In order to exploit informational asymmetries to their advantage (and potentially to the common advantage that the practice of pooling information affords), inhabitants of SN need to identify particular others as good informants regarding a particular issue, whether *p*, of interest to them, which they cannot directly (or easily) settle themselves. In other words, in the role of inquirers, they are hard pressed to separate good (reliable) from bad (unreliable) informants on the point of whether *p*. This can be viewed as a *conceptual need*, on the assumption that concepts are classificatory tools par excellence.

What about the solution? The practical value of solving the problem seems so high that inhabitants of SN eventually adopt a practice of "flagging" other agents meeting certain conditions with a concept that incorporates some, though not all, features of our (full-blown) concept of knowledge. Inquirer Y could so flag X with respect to *p* if: (i) X is as likely to be right about *p* as Y's current needs and capacities require; (ii) X is honest, (iii) X is able to convince Y that *p*; (iv) X is accessible to Y here and now; (v) X is understandable to Y; and (vi) X is detectable as a good

informant concerning *p* by Y.[23] Call the concept possessing those features *proto-knowledge*.[24] Its shared core with our concept of knowledge is that of protoknower being a *good informant*. As for the main differences, attributions of proto-knowledge are always indexed to the situation (concerns, abilities) of particular inquirers. Also, inquirers cannot flag themselves with that label. Nor can they recommend a proto-knower to others (they do not engage in epistemic gossiping that enlarges the chain of epistemic deference). And they do not yet distinguish between cases in which a belief is true due to mere luck and cases in which a true belief is formed non-accidentally. So this initial cognitive situation and conceptual practice is highly idealized and abstract. But when we start to add details to it – more realistic social and cognitive conditions and needs of human beings – Craig hopes to show why and how it could have been elaborated to incorporate such subtleties that characterize our notion of knowledge, thereby becoming increasingly "objectivized."[25]

### *4.2 Digging Deeper: From Calls to Talk*

I shall not evaluate the epistemological merits of Craig's ambitious project, as I am concerned to illuminate our assertoric practice, not our epistemic practice. My main objective is to sketch, by analogy, a pragmatic genealogy of the assertoric practice as embedded in the game of giving and asking for reasons. At the end of the day, however, it will transpire that there are interesting links between the two practices.

Note, to begin with, that linguistic communication is built into Craig's pragmatic genealogy from the start. Indeed, his concern seems to be with testimonial situations of the following sort. There is inquirer X and potential informant Y. The issue of interest to X is whether *p*. If Y has said something on the point of whether *p*, X may or may not rely on Y, depending on whether Y meets certain desiderata (indicators of

---

[23] This is not an analysis in terms of necessary and sufficient conditions. In the prototypical cases, all conditions are satisfied. In other cases, only some may be satisfied; but the concept applies all the same. As for (vi), various "features" (e.g., X sits atop a tree) might reliably indicate to Y that X is likely enough to be right about *p* (e.g., that a tiger is approaching Y).

[24] Adopting Kusch's (2009) terminology.

[25] Famously, Craig aims to show that this account captures what it right in different epistemological accounts of knowledge.

reliability) regarding *p*. Alternatively, having judged that Y meets the desiderata, X may ask Y to tell him whether *p*. So agents are capable not only of *telling* things in the sense of discriminating them, but also of *telling* each other about them in verbal utterances whose function is to communicate information. What is at issue is to identify someone in a favorable position to tell one whether *p* – i.e., someone likely enough to provide a truthful, and thus trustworthy claim on the point of whether *p*.

Yet, language facilitates not only transfer of adaptive information, but also of harmful (deceptive or manipulative) misinformation. So there is a threat of free-riding: one may take information from others without giving them one's own (or even misinforming them) in turn, whenever it pays to do so and one can get away with it. Craig starts at the point when the problem is solved. Interdependent and cooperative inhabitants of ESN are portrayed as disposed to share information. Although one condition that a prototypical proto-knower should satisfy is that he be *honest*, this is not the main concern of inquirers. The urgency is to find a way of separating good from bad informants, where this is mostly a matter of their *accuracy* rather than *sincerity*.[26]

Let us dig a bit deeper. Why and how could something like a basic linguistic practice already presupposed in Craig's account have developed in the first place? And why and how could something like the assertoric practice have been elaborated from it?

At a more basic level, a similar problem has been discussed by researchers studying so-called signaling games in non-human animals. Here the ultimate question is why and how dispositions to emit honest/reliable signals (including vocal) could have evolved and stabilized. Giving away honest-reliable signals (indicators of some aspects of the environment) potentially benefits receivers (if what is indicated is of use for them). But what about signalers? For one thing, they incur at least some costs. For another thing, when their interests do not line up with those of receivers, cheating at the expense of receivers may benefit signalers more if they can get away with it (with proportionate costs). If so, signalers will be under selection pressure to cheat. As

[26] Cf. Williams (2002) and Fricker (2008).

cheating becomes more frequent, receivers will be under selection pressure to resist signals. How come, then, honest signals ever stabilize in the animal realm?

One influential theory is that of *costly signaling*.[27] In the animal realm, where the assumption of conflicting (fitness) interests is often realistic, we can expect the spread of hard-to-fake signals which are credible because costly to signalers. It may be costly physiological traits (e.g., the tail of a peacock advertising its fitness to peahens as its potential mates) or costly behavioral traits (e.g., the Thompson's gazelle's stotting advertising to predators that it is fit and thus not worth the effort of trying to catch it).

However, not even all animal signals are particularly conspicuous, costly to produce or hard to fake.[28] At any rate, the theory of costly signaling is a non-starter for linguistic communication: arbitrary linguistic symbols are certainly not costly in the requisite sense. There is therefore something of a general consensus that any plausible evolutionary model of human communication must show why, on average, it pays for producers to be honest, so that it pays, on average, for consumers to pay attention and buy their messages. This intimates that, from the evolutionary perspective, one may ask how a linguistic practice is possible, particularly one that facilitates information trading. For linguistic exchanges are cashed out in the currency of conventional (non-iconic) signals that encode messages with displaced reference (to spatiotemporally distant items). Such signals are "cheap" to produce and easy to withhold or fake. We know that *somehow* it must have evolved and stabilized. But *how*?

Different "how possibly" stories can be reconstructed. They typically presume that linguistic communication could only have evolved in social conditions that were cooperative in some ways. For instance, it could be argued that kin selection was the initial driving force behind the evolution of (proto-)languages making possible

[27] Based on the so-called "handicap principle". Roughly, the idea is that deception is unprofitable if the sender must pay a high price (cost) to produce the signal. Cf. Zahavi and Zahavi (1997).

[28] More generally, for honesty to stabilize, honest signals need not be particularly costly. Rather, the cost of deception (not of honesty) may be critical. As Rich and Zollman (2016, p. 238) say: "Honesty can be free, so long as lying is costly."

cooperative exchange of honest information - particularly in the context of parents sharing adaptive information with their dependent offspring.[29] Because there are shared genetic interest between parents and offspring, the problem of cheating or exploitation could have been kept at bay. Alternatively, or in addition, (proto-)linguistic communication could have evolved when humans were under the selective pressure to collaborate in scavenging, hunting and gathering, which required more or better coordination.[30] Because interests of collaborators intersected in shared goals, honest forms of gestural and/or vocal communication could have emerged to coordinate or facilitate them. Based on this increasingly conventionalized forms of symbolic communication could have emerged. Another possibility is that honest communication can stabilize if *cheating* is costly.[31] For instance, if there is a prospect of repeated interaction (e.g., in small-scale, hunter-gatherer communities), cheaters may incur significant costs in the long run, if others refuse to trust them, give them information or otherwise cooperate with them. Further, since cooperative reputation and partner-choice also matter in small-scale communities dependent on cooperation, individuals could have been under the selection pressure not to cheat or parasitize on communication on pain of suffering reputation damages and related consequences. Finally, perhaps ancestral human communities established mechanisms of social pressure that incentivized communicators not to cheat. Norms enforced by punishment or sanctions (the costs of cheating, again) suggest themselves here.[32]

---

[29] Cf. Fitch (2014).

[30] Cf. Tomasello (2008), (2014). See also Bickerton and Szatmáry (2011) for a different suggestion.

[31] Rich and Zollman (2016) apply this logic to signaling games.

[32] Still others hypothesize that human (protolinguistic) communication might have evolved primarily to promote social bonding (Dunbar 1996, Deacon 1997), to maintain a new social order based on *reverse dominance* (Knight 2014), to secure mates (Miller 2000), or to gain or improve one's social status or reputation (Dessalles 2007). One of the most intriguing hypotheses currently on the market conceives of language evolution in terms of *communicative niche construction*. Cf. Laland (2018). This niche could have been constructed as part and parcel of a species-unique process of cultural niche construction characterized by the cumulative ("ratchet") effect, including the pressure to cope with increasingly complex and diverse cultural-material-technological environments by transmitting (social-cultural learning and teaching) cultural practices, norms, information and know-know. Laland conjectures that the original situation friendly to the evolution of linguistic practices was that of teaching offspring.

I won't pass judgment about which of these "how possibly" stories is the most promising.[33] But I want now to show that elements of the last one can be appropriated to bring us a bit closer to providing a pragmatic genealogy of assertoric practice.

In the style of Craig, let us imagine an ancestral human population in a *discursive state of nature* (hereafter DSN) described as follows. It involves groups of modestly social and cognitive beings with on-board sources of information relevant to their ends. For critters with limited on-board cognitive sources, exploiting cues or signals of conspecifics may be a significant advantage in terms of gathering useful information, provided that such cues or signals reliably indicate something that is of interest to them. As Ruth Millikan has suggested, the historical fact that certain types of signals emitted by producers had caused in consumers such an informational effect may explain their subsequent reproduction and proliferation.[34] If our critters in DSN are disposed to produce different types of vocalizations (perhaps in addition to points and gestures) in the presence of different kinds of objects or situations, presenting different kinds of opportunities or challenges of practical interest to their fellows, we can imagine how they could have started to treat them as signals (if not yet intentional

[33] All these hypotheses face challenges. The first has to explain how communication is possible in (extends to) situations in which partners to communication are not related (as obviously human communicators are not – not even in ancestral hunter-gatherer groups). The second can explain this, but it has to explain how communication is possible in (extends to) non-mutualistic situations with a mixed motive structure. The third hypothesis can explain this, but it has to explain how communication is possible in larger and mixed communities where individuals often communicate with little likelihood of future encounters and reciprocation or in situations when no third parties are present to monitor them. Plus, indirect reciprocity may itself depend on some kind of policing through gossip, hence linguistic communication of sorts (rather than the other way round). The last hypothesis can perhaps fare better in this respect. But it faces the challenge of explaining why people should punish, as these seem to be costly acts, so that it might be preferable for one to let others do the dirty work. To this, however, it may be retorted that punishment need not be particularly individually costly if it is effective (having a deterring/preventive effect) or collectively distributed/administered. Similar issues are discussed in the context of human social evolution in general and cooperation in particular. Cf. Birch (2017).

[34] Signals produce effects that interest senders often enough to encourage continued replication only if receivers replicate hoped-for responses often enough, which would materialize only if receivers often enough benefit from signals themselves. Cf. Millikan (2005). See also Sperber (2001) for a similar logic.

communicative acts). For instance, as Dave Beisecker invites us to imagine, such critters:

> […] could […] be trained to hoot spontaneously in the presence of delectable berries, to snort whenever they spot a rabbit, or to emit a yawp (or Seussian yopp!) when their world or well-being is threatened. As long as these dispositions are more or less regular, these critters could come to use one another's vocalizations as sources of information or signals. (Beisecker, 2013, p. 4)

If types of sounds reliably co-vary with types of situations, bystanders (overhearers) can learn to exploit the former as indicators of the latter, presumably using their on-board cognitive sources to forge associations between them and form expectations based on this.

I shall suppose that such signaling games are explicable in this style. Yet, if DSN critters are to become more like human communicators, a different perspective may be needed.[35] But one may go in two directions, depending on which aspects one prioritizes.

Going in one direction, one may ponder why and how characteristic *intentional* forms of human communication could be elaborated in DSN up to more voluntary and controlled signals specifically addressed to the attention of conspecifics who in turn infer communicative goals. Based on this, one could explain how increasingly "conventionalized" forms of linguistic communication could be elaborated. This could be a variation on the familiar theme of Paul Grice.[36] However, standard Gricean

[35] I should note that Millikan (2005) pushes this kind of approach very far to include also linguistic activities. In particular, she offers her own story even about utterances in a declarative mode as having the *proper function* to induce true beliefs in hearers (without requiring Grice-style intentions to produce them). Inspired by Millikan's idea of proper functions, Kelp (2018) and Graham (2019) give function-first accounts, according to which we might come to see why and how assertings could have come to be governed by (social) norms requiring truth telling or knowledge reflecting their proper (communicative) function of producing true beliefs (according to Graham) or knowledge (according to Kelp).

[36] Cf. Grice (1989), Bennett (1976), Tomasello (2008), Scott-Phillips (2015).

approaches presupposing complex communicative intents (self-reflexive and with nested propositional mental states) are problematic from the developmental (evolutionary, ontogenetic) perspective. In particular, then, it is unclear that language depends on them, rather than the other way round.[37] On the other hand, I should mention that there are also minimalist Gricean approaches registering and addressing this problem. So this direction is open and well worth exploring.[38]

But I shall explore the second direction focusing on the normative structure of human communication. From this perspective, the genealogical question is: Why and how could signaling games be elaborated by DSN critters into communicative *practices* comprising utterances of conventionalized expression-types subject to normative attitudes and expectations setting up standards of proper performance? Here a story can be told that does not necessarily assume complex intentional-cognitive structures – at least not to begin with. It does not have to assume that conceptual-propositional cognition emerges independently of linguistic practices. And it does not have to presume complex intentions (thoughts about thoughts) more generally. All of these may coevolve only hand in hand with normative linguistic practices.[39]

Exploring this direction, imagine that our critters in DSN not only tend to emit certain kinds of sounds in certain kinds of situations but also start to actively reinforce one another's dispositions to emit such kinds of sounds only in such kinds of situations (not in others). They would be particularly sensitive to deviations from corresponding regularities or associations, which they could *normalize* by way of exerting social

---

[37] Cf. Moore (2017a), (2017b), (2018a), (2018b). Alternatively, one could give *expressivist* accounts of intentional forms of communication that do not require any communicative intentions. Cf. Bar-On (2013), (2019).

[38] I shall explore it myself in Chapter 5, though I shall do so from the developmental perspective.

[39] The story concerns creatures that are already cognitive and social to some extent. However, there is a tendency to presuppose prelinguistic minds capable of a rich *conceptual understanding* and *reasoning*, including about other minds (capacities to understand, influence or even share psychological states). Though common in the literature, such contentions are contentious. Alternative accounts assuming more modest cognitive prerequisites or corequisites are on offer. Cf. Bogdan (2009); Hutto (2008); Hutto and Myin (2017); Hutto and Satne (2015); Zawidzki (2013).

pressure in the form of openly disapproving of them or even sanctioning them. At this point, rudimentary, implicit *proprieties* could materialize. As Peregrin puts it:

> Once there is a tendency to associate a sound with a situation and the association serves some useful purpose (and, of course, crying Danger! In dangerous situations is useful), the association may come to be taken, by members of the community in question, as proper, as something that ought to be. This is to say that the members may start trying to avert one another from emitting the sound in inappropriate situations (and at least in some cases from not emitting it in appropriate ones). Thereby the link ceases to be a matter of a mere association, of tendencies or dispositions, and starts to be that of a propriety; it acquires a normative character. (Peregrin, 2014, p. 134)

Using the hint of Beisecker[40], we may add that critters in DSN would be under pressure to coordinate their normative attitudes (second-order responses to others' responses) with the preponderance of such attitudes in their group, or else they would not be able to extract reliable information from others' vocalizations. They would be disposed to disapprove of responses that are in order and to produce responses that are not.

Critters capable of such non-trivial coordination must possess minds capable of tracking and recognizing deviations from expected/normal behavior. Also, they must monitor and recognize others' responses to such behavior as negative (or positive) and adjust their own behavior and responses accordingly. Recent empirical research and models indicate that, before the advent of linguistic practices, humans might have been gregarious creatures capable of coordination and cooperation. Specifically, in the extended process of gene-culture coevolution they could have evolved primitive propensities to conformism and to produce affective-normative attitudes of sorts when witnessing behavior of conspecifics that frustrated their expectations of conformity or cooperation.[41] They could have been under pressure to coordinate and calibrate such responses with the preponderance of attitudes in their

[40] Beisecker (2013).

[41] Boyd and Richerson (2005), Henrich (2016), Tomasello (2014), (2016), (2019), Rakoczy and Schmidt (2013), Schmidt and Tomasello (2012), Schmidt and Rakoczy (2019).

community. Or else they would be disposed to disapprove of behavior that is accepted and to produce behavior that is not accepted. Such social pressures would have shaped their behavior in the direction of conformity and cooperation, because consequences of deviant (out-of-norm) behavior for a socially dependent creature could be costly. Consistent with this, we can imagine that our DSN critters could have co-opted this kind of arsenal to support conformity in vocalization, particularly by adopting negative (censorious) attitudes toward deviant responses. They would coordinate and calibrate their attitudes to conform to the preponderance of attitudes in their community. So regulated practices of vocalization would in turn enable or facilitate coordination and cooperation in other domains.

Schematic as it is, this story gives us a hint of why and how ur-linguistic practices that enable critters to extract information of some value to them from others could emerge in DSN. Our critters are cognitive beings. But they don't have to be overly cognitively sophisticated. Also, they are sociable critters. But they don't have to be unrealistically cooperative in order to cross this Rubicon. In so far as it is in the interest of each individual that vocalizers function as his own perceptual-cognitive proxies, it is in his interest that witnesses coordinately regulate and sanction vocalizing acts, thereby shaping the dispositions of vocalizers so as to produce by and large reliable signals. If such regulations and sanctions are effective and collectively distributed/administered, their individual costs might be compensated by their individual net dividends from the communicative practice. And perhaps groups with a well-functioning communicative practice of this kind would, as a consequence, be better informed and coordinated, thereby having an edge over other groups.

It may be thought that our just-so story applies only to situations of a rather simple kind. Recall the talk about vocalizers' dispositions to hoot in the presence of berries. In addition to more remote individuals who can hear the sounds but cannot directly check whether the associated situation or object (berries) is present, there may be witnesses who can check this. If they register a mismatch, they may frown upon vocalizers or inflict worse sanctions upon them. If so, communication of this sort may not seem all that different from different kinds of alarm calls documented in monkeys or food calls documented in chimpanzees (though it is arguably different in that it is

supposed to be regulated by normative-sanctioning attitudes instituting propriety conditions).[42]

Although such situations may play a role in fixing proprieties of vocalizations, I do not think that the story is restricted to them. Once proprieties are established – presumably in situations in which both vocalizations and situations or objects are mutually perceived as co-present and hence correlated[43] - we can imagine that vocalizations subject to them could be produced even when associated items are not accessible to one or both parties (possibly accompanied with points or mimes). In such situations there may be no witnesses who are *directly* in a position to check the reliability of performances (unless they have witnessed the associated item themselves lately) or to sanction them. Even so, if they may *indirectly* check them (e.g., coming to the indicated place of the associated item), they may eventually sanction them. Our ancestors must have crossed this Rubicon at some point, for we do refer to objects or situations distant in space or time (displaced reference), not to speak of non-existent items, possible items, impossible items, desirable outcomes, etc.

This ur-linguistic practice has an informative, indeed, referential dimension. In this sense, utterances belonging to it have one dimension of intentionality (aboutness, directedness). Because critters' dispositions to emit certain types of sounds in certain types of situations are conformed through coordination of normative attitudes, their utterances differ from spontaneous animal calls that indicate the presence of some object or situation. Since this requires inhibition and control over responses, there is

[42] This vocabulary should be taken with caution. At first, both responses of vocalizers and responses of consumers may be reflex-like dispositions. At this stage, to talk of "approvals," "sanctions" or "proprieties" sounds strained. The vocabulary is more warranted at a stage when first-order and higher-order responses become less spontaneous (more controlled) and treated by critters as "calling for" other responses (e.g., censorious, critical, justificatory). Though even here it may be debated where exactly the threshold is.

[43] Tomasello (2008) and (2014) stresses the critical role of joint attention in the evolution and acquisition of language (during ontogeny), arguing that fixing the reference of a verbal signal is facilitated in situations in which an utterance singles out an object or feature at the intersection of attentional foci of two subjects, who mutually monitor and coordinate their attention to the object or feature.

an aspect of voluntary control that characterizes intentional behavior.[44] Initially, critters in DSN actively shape one another's dispositions to produce utterances primarily by adopting normative or sanctioning attitudes to utterances. But our story allows that they could also start to actively shape others' behavior by addressing their utterances to them in a goal-directed way, with an incipient awareness of their informational effect. If so, this would get our critters yet closer to a genuine practice of intentional communication.

That said, it would be premature to infer that the utterances of our critters express anything like claims. One obvious thing is that they lack inferential roles linking them to other utterances. Our critters may practically distinguish (*implicitly*, in what they let pass, disapprove of, sanction) utterances of "Tiger (there)" as fitting certain situations (featuring a big striped cat) and not others. They are also prepared to do something (e.g., hide themselves) upon witnessing certain utterances ("Tiger (there)") rather than others. They may similarly process and be disposed to respond to a host of other utterances. But they do not yet forge and appreciate any inferential proprieties between utterances of the following sort:

"Lo, a big striped cat (there)" ⇒ "That's a tiger"

"That's a tiger" ⇒ "That's a killer animal"

"That's a killer animal" ⇒ "That's dangerous"

…[45]

On this view, to say that "Tiger (there)" can be uttered to express a particular claim is to locate it in a web of such inferential relations. Since the utterances of our critters do not yet form a system structured by such relations, they lack inferential roles. Because of this they fail to express determinate claims, assuming that claims do have inferential roles.

---

[44] This can perhaps be thought of as a product of internalizing basic norms. If so, such a process is likely to range from redirection of primarily spontaneous and other-directed normative responses onto one's own behavior to ever more complex, self-conscious forms of regulation (which arguably require language).

[45] This, it should go without saying, is merely a suggestive and open-ended list.

I shall therefore suppose that DSN critters have yet to elaborate a basic claim-making practice. This, at any rate, is a critical step towards elaborating an assertoric practice hand in hand with reasoned discourse. After all, to treat utterances as related by inferential links paves the way to treating and understanding them as potential moves in a reasoned discourse. One – perhaps *the* - characteristic feature of assertings is just this.[46]

Peregrin (2014) provides an illuminating rational reconstruction of such a practice.[47] He starts with Wittgenstein's famous builder's game, cashed out in *calls* realized by uttering expression types such as "block," "pillar," "slab," "beam," etc.[48] For instance, builder X calls "block" and assistant Y brings him a block, they go on. But if Y brings a pillar, say, X would express his disapproval; and Y has to correct himself (Y may learn the game this way). To this extent, simple utterances may be subject to simple proprieties. Peregrin further invites us to imagine the game to be enriched by the expressions "brick," and "post." The first may be treated as in order whenever "block" or "slab" is in order; the second may be treated as uttered in order whenever "pillar" or "beam" is in order. Thus, calling "brick" is X's way of influencing Y to bring him either a block or slab. This illustrates how basic incompatibilities and implications can emerge:

- whenever it is appropriate to utter "block" ("slab"), it is also appropriate to utter "brick."

---

[46] In principle, however, my approach does not stand and fall with the inferential-role semantics advocated by Brandom (1994) and others (cf. Peregrin 2014). Even if one assumes that inferential relations between utterances (or sentences) reflect preexistent meanings (perhaps specified by truth-conditions), assertings may still be accounted for in terms of their contribution to reasoned discourse, which requires a system of utterances (sentences) for potential inferential transitions (discursive moves) between them.

[47] Peregrin (2014, pp. 100-104). Peregrin does not use his example to this end. But it can be co-opted as a "rational reconstruction" illuminating certain crucial steps (elaborations) to be taken, whilst leaving out others. In Chapters 2 and 5 I shall argue in detail that a realistic pragmatic and intersubjective (including psychological) structure is likely to be richer.

[48] Wittgenstein (1953, §2).

- whenever it is appropriate to utter "pillar" ("beam"), it is also appropriate to utter "post."
- whenever it is appropriate to utter "block" ("slab"), it is inappropriate to utter "post" ("pillar", "beam").
- whenever it is appropriate to utter "pillar" ("beam"), it is inappropriate to utter "brick" ("block", "slab").

This may perhaps be called a basic claim-making practice, on the ground that it is structured by rudimentary inferential relations. However, we get something like proto-assertional performances only in the next step, when utterances start to be opposed (based on incompatibility relations) and defended (based on implicative relations) by other utterances. For example, pointing to something that looks to him like a block from his position, Y may utter "brick." If the same thing looks rather like a beam from X's position, X might want to oppose and correct Y by uttering "beam." This would reflect the incompatibility dimension. This response may also prompt Y to vindicate his utterance: perhaps by uttering "block" and bringing the thing to X. Y's defense then reflects the inferential dimension of the practice. Eventually, such exchanges may come to resemble a basic reasoned discourse involving assertion-like utterances.

This gives us at least a rough model of what it could take for DSN critters to move from the ur-linguistic practice to a practice that more deserves the label "linguistic," because it involves a system of utterances standing in inferential relations.[49] And it points in the direction of a Dialectical Account of assertion. But

[49] Perhaps truth-evaluable claims standing in inferential relations require sentences with something like a subject-predicate structure, whose significance is to characterize something as of a certain kind. Unlike "slab" or "pillar," our original examples such as "Tiger (there)" or "That's a tiger" are obviously of that kind. However, one-word utterances may already intimate such a structure if they are accompanied with pointing or gestures, the implicit message being something like: "Pillar goes here (or there)," "That's a pillar," etc. At any rate, we can imagine extensions in this direction: adding adjectives, demonstratives or numerals and rules of combining those kinds of expressions. This would create a larger system of structured sentences interlinked in a more complex web of inferential relations, expressing more finely individuated meanings. With recursive elements, then, an open-ended number of increasingly complex sentences can emerge, expressing still more finely differentiated meanings. And with logical operators we get something still closer to natural languages, especially if we think of propositional meanings as something to which various attitudes might be adopted such as affirmation, negation, supposition, etc.

even if it may be a promising direction, what's the *point* of such elaboration? That is, why might DSN critters need a practice of this kind? In the following, I shall speculate that it might reflect the need of sociable human beings to engage or come to terms with disagreement.

### *4.3 Huw Price on Merely Opinionated Assertors*

Huw Price (2011) offers us one suggestion here. He invites us to imagine a tribe of ancestral human beings called *Mo'ans* – so-called because they are linguistic creatures capable of making *merely opinionated assertions* (briefly MOA-s). That is to say, their linguistic practice is implicitly subject to the following two norms (note that I have replaced "assert" with "MO-assert, which seems to me to better reflect Price's own strategy):

> (*Sincerity – subjective assertibility*): It is incorrect to MO-assert that *p* if one does not believe that *p*. To do so provides *prima facie* grounds for censure, or disapprobation.
>
> (*Warrant – personal warranted assertibility*): It is incorrect to MO-assert that *p* if one does not have adequate personal grounds for believing that *p*. To do so provides *prima facie* grounds for censure, or disapprobation.

This being so, Mo'ans recognize that something is amiss when one of them is being insincere in what he says, or says something incoherent in light of his own beliefs or other things that he has said. And they would criticize one another on this score. Yet if two Mo'ans, X and Y, live up to both these standards, then, even though one of them MO-asserts a sentence materially incompatible with what the other believes or MO-asserts, neither X nor Y (nor other Mo'ans) would think that at least one of them must be wrong. On the contrary, both may by perfectly right – by the only standards that they recognize.

What is missing from this practice of Mo'ans compared to our own practice of fact-stating (assertoric) discourse? Price submits that Mo'ans do not socially engage each other as we do. Mo`ans simply fail to recognize *objective disagreement*. In other words, they lack a sense that even two subjective perspectives that are sincerely expressed and internally coherent might nevertheless conflict in a way that invites criticism and argument, which could resolve the issue one way or another, thereby re-

establishing agreement. But then it is as if they fail to see that there is something to be learned about the issue at hand from others who do not share their own views.

Our own fact-stating practice differs in this respect. If you claim something with respect to some issue that is incompatible with what I believe or have claimed with respect to that issue (or *vice versa*), then I am prepared to treat your claim as *incorrect* – quite independently of the source of this incompatibility and disagreement between us.

Price intends this imaginative exercise to show that a communicative practice subject to *Sincerity* and *Warrant* fails to generate the right kind of *friction* to be resolved by argument eventually establishing agreement. For such a friction to exist, speakers must register incompatibilities between sayings or views and treat them as indicating that one of them is incorrect in a sense close to being "untrue." Unless speakers are prepared to treat (disapprove of) a saying incompatible with their own views as incorrect in roughly this sense, they won't have an incentive to engage in a reasoned discourse. Hence they won't have an incentive to confront different perspectives and won't reap the benefits of pooling information via learning from others. In so far as this marks a normative dimension, we can say that practitioners sensitive to it need to appreciate something like a norm of truth:

> (*Truth*): If not-*p*, then it is incorrect to assert that *p*. If not-*p*, then there are *prima facie* grounds for censure (or disapprobation) of an assertion that *p*.

*Truth* does seem to generate the right kind of social friction. If Mo'ans take account of material incompatibilities and start to observe *Truth* (if only implicitly), they become disposed to immediately treat sayings incompatible with their own commitments as incorrect. This then generates an incentive for disagreements to be resolved by asking for and giving reasons. They thus become prepared to treat such disagreements (including between third-parties) as indicating that one party has to be at *fault*, quite independently of their source. With *Truth* in place, they may reap the significant dividends of the epistemic division of labor and information pooling – in a way that promotes their own cognitive ends - that would otherwise not be available to them. MO-assertions would thus give way to assertions in which reasoned discourse -

as we know and practice it - is cashed out. In a way, Mo'ans would thereby become extinct.

### *4.4 Assertings and Reasoned Discourse*

Let me now translate Price's potential lesson into my genealogical key. Two things bear pointing out.

First, Price is adamant that his story is not a reconstruction of how assertoric practice embedded in reasoned discourse could have been adopted. Indeed, Mo`ans may well be impossible creatures, if

> Removing that sense of engagement amounts to removing anything that might count as an assertion, or indeed as an expression of opinion, in the full-blown sense of the term. (Price in Rorty and Price, 2010, p. 257)

The point of Price`s thought experiment was to imagine a stripped-down version of our own assertoric practice so that

> […] by seeing what their linguistic practice would lack, we see what truth adds to our own" (Ibid.).

I am sympathetic. In particular, I think that practical concerns with sayings being treated as in order vis-à-vis the norm of personal justification (*Warrant*) require some sophistication that might in fact depend on prior concerns with sayings simply being treated as correct or not.[50] For instance, if interlocutors disagree with speaker's saying, challenge him and find his response not satisfactory by their lights, they can nonetheless come to find speaker internally coherent by his own lights. Or there may be dialectical stand-offs, in which case both parties to the dispute can regard one another as internally coherent by their respective lights.

[50] Rorty voiced a related worry: „I do not see why a radical interpreter would construe as assertions the noises made by organisms that never attempt to correct one another's behavioral dispositions-never try to get others to make the same noise they do. One cannot justify by own lights if one does not know what it is to justify by the lights of others. Price's "chatter of disengaged monologues" … is possible only as an enclave within a culture in which there is lots of engaged dialogue." (Rorty in Rorty and Price, 2010, p. 255)

It thus seems to me that, in the genealogical spirit, we must start with a more realistic practice. Let us assume that the practice of critters in DSN can serve this purpose. Still, Price may yet be right in the following sense: for it to become an assertoric practice linked to reasoned discourse, critters must establish and become sensitive to the dimension of correctness captured in *Truth*. For it is hard to see why one would challenge or vindicate claims if one does not have such a basic sense of correctness to begin with.

Second, however, this raises the question of why and how our critters could develop such a sensibility. As I described it, the communicative practice of critters in DSN would allow them to use others' utterances as extensions of their on-board sources of information about the world. Departing from this, I explained why and how they could shape their dispositions to be reliable vocalizers, eventually establishing basic proprieties of utterances, and later forging basic inferential and incompatibility relations between them. The idea was that critters in DSN would need to shape and coordinate their dispositions to verbal responses and normative attitudes or else they could not benefit from the practice. This being so, an incipient sense of (in)correctness that is made explicit in *Truth* can be viewed as developing hand in hand with the semantic space of basic proprieties and incompatibilities, being first *implicit* in normative attitudes of speakers. So when one critter utters "Deer (there)" (because of how an animal looks to him from his position) and the other reacts by "(No,) wolf" (because it so looks to him from his different position), this gets them close to registering disagreement, in so far as they are already implicitly sensitive to such proprieties and incompatibilities. At this point, they may treat others' sayings as incorrect on the basis of being prepared to utter sentences that they recognize as incompatible. Thus, they are implicitly sensitive to something like *Truth*.

According to Price himself, indeed, the basic sense of correctness to which *Truth* gives voice is implicit in the habits of approval and disapproval (normative attitudes). Situations of disagreement that arise due to these habits are cognitively and socially unstable; hence the pressure or incentive to address and overcome them. And Price suggests that this encourages reasoned discourse. If we ask why, his proposal is as follows:

> […] habits of approval and disapproval tend to encourage dialogue, by providing speakers with an incentive to resolve disagreements. It is true that at this point the pragmatist's question "What difference does *that* make?"- can be (indeed, should be) asked all over again. The importance I have here attached to dialogue rests in part on the gamble that this question will turn out to have an interesting answer, in terms of the long-run advantages of pooled cognitive resources, agreement on shared projects, and so on. (Price, 2011, p. 177)

Transposed into my key, the lesson is this. Once critters in DSN develop such habits, they will have a strong incentive to engage with each other's different views in reasoned discourse. The reason *why* is that exchange of reasons will allow them to coordinate their cognitive responses, as expressed in sayings, and reap even more benefits from their already useful, up-and-running practice: coordinating cooperative ventures, learning from each other, pooling knowledge, making collective plans or decisions, etc.[51]

At some next point, then, we can imagine that others` disagreement with one`s saying comes to be treated as a prompt or challenge to vindicate one's claim and with it also one` social *credit* (or status) as a fellow speaker (e.g., testifier) *worth* relying on or deferring to, which clearly matters to sociable creatures in DSN who depend on one another as cognitive proxies and, more generally, as cooperators. After all, among sociable creatures of roughly the same bargaining power, a tendency would be to vindicate one's saying/view – so also one`s credibility - not by backing it up with one's physical power but with the power of reasons put into words.[52] This tendency could later be turned into an *implicit norm* governing such communicative interactions embodied in coordinated normative expectations and attitudes. This will in turn require an expanded communicative repertoire allowing speakers to ask for, give, assess and

---

[51] Congenial considerations can be found in Henriques (2011), Mercier and Sperber (2017), Tomasello (2014).

[52] This may not be unrealistic assumption. Nowadays, it is generally presumed that human hunter-gatherer groups were quite egalitarian in part due to taming potential bullies (dominant alpha males). But they already must have had opportunities to engage in disputes and to resolve them. Cf. Knight (2014).

respond to reasons. In particular, scrutinizing moves playing the role of requests for reasons (queries, challenges, etc.) will be treated as calling speakers on to the task of vindicating their sayings (expressed views), thereby showing that they are *entitled* to make (have) them (so others are entitled to rely on or defer to them). By the same token, speakers will be implicitly treated as having a certain *responsibility* (or *commitment*) to be discharged by vindicating their sayings in the event they are scrutinized. And they would typically vindicate them by making other sayings taken to support original sayings. Should their reasons prove convincing, interlocutors could revise their own views and adopt those of speakers. On the other hand, should speakers not be up to the task, they could themselves retract their sayings and revise their views accordingly. Eventually, should interlocutors themselves provide plausible reasons for incompatible views, speakers could adopt them. Speakers who, for some reason, won't retract their sayings despite the fact that they could not vindicate them would anyway be liable to lose their status as worth relying on and deferring to in the eyes of interlocutors (if only with respect to the issue in hand).

In effect, this process could establish a communicative niche, in which the *trust* granted speakers is backed up by speakers' undertaking both *responsibility* and *liability*. Unreliable speakers or cheaters are accountable and liable to disapproval, shaming and other sanctions, including damages to their reputation as speakers worth relying on.[53] Once in place, it is perhaps not hard to see that this could vastly expand individual opportunities and means of gathering information for adaptively coping with the natural and social-cultural environment. After all, to query or challenge a claim seems to be a potent way of checking reliability or honesty, and plausible or coherent explanatory or justificatory reasons are indicators of reliability and honesty *par excellence*.[54] Not only that. It would enable humans to criticize, explain or justify their behavior more generally. For plausible or coherent explanations or justifications of one's behavior are indicators of one's cooperative reliability that boost or repair

[53] Incidentally, Craig (1990) has little to say on this important aspect. Fricker (2008) makes the point.

[54] Cf. Sperber (2001) and Sperber at al. (2010) on giving reasons for sayings (arguing) as a method of convincing epistemically vigilant interlocutors who assess reliability of speakers and check their claims for reliability and coherence. I expand on this in Chapter 3.

one's cooperative reputation. On the one hand, the practice would provide a mechanism of normalizing behavior vis-à-vis implicit norms regulating social or communal life. On the other hand, it would make it possible to explain or justify out-of-norm behavior or non-conformist views also, which could prove just as innovative and useful.[55]

We have now arrived at a specific category of sayings with the dual role of "justifiers" and "justifieds" within the larger practice of reasoned discourse.[56] At this point, we can register the connection to *Dialectical Accounts* of assertion. Consider Brandom's version[57]:

> In asserting a claim one not only authorizes further assertions, but commits oneself to vindicate the original claim, showing that one is entitled to make it. Failure to defend one's entitlement to an assertion voids its social significance as inferential warrant for further assertions. It is only assertions one is entitled to make that can serve to entitle others to its inferential consequences. Endorsement is empty unless the commitment can be defended. (Brandom, 1983, p. 641)

Let's unpack this. Brandom invites us to think of assertions as performances in a larger social-normative practice of giving and asking for reasons, in which assertors are implicitly treated as assuming a certain *authority* over and *responsibility* for their sayings or claims therein endorsed.[58] These are social-normative standings (statuses), which exist only when social creatures mutually recognize them. In the first instance, they do so by implicitly/practically treating one another as such. Thus, to treat assertor as having authority over the asserted claim that *p* is, basically, to be prepared to defer to him on that score. To treat assertor as having responsibility for *p* is, basically, to

---

[55] Henriques (2011), Mercier and Sperber (2017) and Tomasello (2014) elaborate naturalistic theories that propose that such justificatory and argumentative practices could have enabled people to become more predictable, express their practical commitments, coordinate joint activities and collective actions or support collective deliberation. See Chapters 3 and 4 for discussion.

[56] In the jargon of Brandom (1994, p. 174).

[57] Setting aside "bare assertions" deemed peripheral or parasitic on what assertion paradigmatically is.

[58] Authority and responsibility are two aspects of specifically assertional *endorsement*.

expect that he should vindicate *p* in the event that claim is challenged or queried[59]. Brandom talks of the *conditional task-responsibility* to vindicate one's *entitlement* to the claim that *p* when one is challenged (or queried) to do so. In this way one could show that one is entitled to make the claim, thereby (re-)establishing one's authority over it, hence (re-)licensing others to defer to him. One can discharge this responsibility by justifying the claim that *p* – giving reasons for it in the form of other assertions. Or one can neutralize the challenge (query) one way or another (e.g., showing that interlocutor is not entitled to it himself, given his further commitments). Or one may defer to another speaker who asserted that *p*, re-asserting *p* on his authority.

Brandom adds an important proviso that one is under obligation to vindicate one's claim only if that claim is *properly* challenged (or queried).[60] Unless and until there are motivated contextual reasons to suspect that there is something amiss with one's claim, one is treated as *default entitled* to (having authority over) the claim he asserted. And others are ready to accept it and to rely on it in re-asserting the claim or using it as fodder for other inferences of theirs. There is thus no *standing obligation* or commitment to justify or otherwise vindicate the original claim. Rather, there is only

---

[59] Here I follow Williams (2015a), (2015b). Brandom speaks usually of challenges only. As Williams notes, in challenging a claim (e.g., by issuing an incompatible claim) one implicates that assertor may be wrong. Whereas in querying the claim one may just inquire whether or how assertor might be right. Furthermore, in Brandom's austere model of autonomous discursive practice, no kinds of discursive performances are required in addition to assertional performances, because challenges may be assertions treated as materially incompatible with challenged assertions. I do not follow Brandom in this respect.

[60] See Rescorla (2009a) for a different view: the assertor is obliged to respond to *any* challenge (in other words: a challenge is legitimate even if one does not articulate specific reasons to motivate it). Though, arguably, one cannot defend one's claim against a persistent interlocutor. in actual practice, the specter of iterated requests for reasons is mitigated: "[…] most interlocutors are not persistent. In practice, speakers usually agree fairly easily upon many relevant propositions. Even when speakers disagree violently, they can usually fall back upon the vast range of background beliefs that we all share … Vindicating a proposition requires responding to actual challenges, not to challenges someone might potentially offer. Thus, on the egalitarian model, it is both possible and routine to vindicate assertions." (Rescorla, 2009a, p. 54). Unlike Brandom and Williams, Rescorla wants to divorce the dialectical account of assertions from epistemology proper.

a *contextual obligation* to do so when the default is cancelled — that is, when the asserted claim is properly challenged (or queried). To come up with such queries or challenges is not a free lunch, however. Only if there are *prima facie* grounds to suspect that, in the given context, something is amiss with the assertion, the default is suspended and the assertor ought to justify or otherwise vindicate it. If he is not able to discharge this responsibility, his authority lapses and he should retract the claim. Even if he is not willing to retract the claim, his assertional authority is compromised anyway, and interlocutors (audiences) won't (be entitled to) defer to him (which is a kind of *liability* to sanction in the form of loss of authority).

This dialectical account of the functional role of assertions within the practice of reasoned discourse is of a piece with our fictitious genealogy. The latter, recall, culminates with a stage in DSN at which there is a need to elaborate a communicative practice whose basic performances (in addition to scrutinizing performances) are sayings playing the dual role of justifiers and justifieds. Indeed, the practice displays the basic social-normative structure that Brandom's account makes especially vivid, though Brandom adds important subtleties of his own. These subtleties – particularly the Default-Challenge structure of attributing-suspending-vindicating entitlements to asserted claims – are pragmatically well motivated in my view.

Put bluntly, there is no point in not granting default entitlement (authority) to speakers just because their claims can be wrong (or dishonest) "in theory," though "in practice" interlocutors do not know why or how. Accordingly, there is no point to responding to unmotivated queries or challenges that are beside the point in the given context. Indeed, it seems reasonable to grant speakers entitlement to their claims even without expecting that they must have self-consciously performed some specific cognitive work to have earned that entitlement. To require this would be to embrace an overly internalist account of assertional-epistemic entitlement according to which it always stands and falls with subject having based (or being in a position to base) his view or claim on conscious reasons in accordance with some general epistemic

principle.[61] Often, they could just be tacitly presumed to have formed their views through reliably exercising their perceptual or cognitive skills, without self-consciously basing their views on reasons (or principles). Indeed, it does not even require that they have access to such reasons at the moment of expressing their views in claims. Only when properly queried or challenged – there being grounds to suspect error or dishonesty on their part – would they self-consciously seek and articulate reasons to vindicate their views or claims.

## 5. Ramifications and Test Cases

Our pragmatic genealogy can be viewed as providing a rational reconstruction of the basic assertoric practice whose *design features* correspond to features stressed by a prominent dialectical account thereof. In particular, it illuminates four characteristic dimensions of paradigmatic assertional performances:

- *Social*. Assertional performances are communicative acts designed primarily for social use and consumption.
- *Dialectical*. Whatever else such performances may be, at the very least it is plausible that they are potential moves in reasoned discourse (asserted claims being positions in the space of reasons).
- *Normative*. Assertional performances belong to a practice that can be regarded as a *social institution* subject to internal normative standards (if only implicit). Their producers and consumers can be regarded as playing certain *social roles* subject to such standards. This is specified in terms of *normative statuses* of assertors (assertional authority and responsibility) and consumers (assertional-inferential entitlement based on deference to assertors). Underlying such normative effects are norms that can be said to *co-constitute* the assertoric practice in the following sense: the practice of asserting would not be what it

[61] This "normative" epistemological account can be criticized for being "descriptively" false, on the ground that it overintellectualizes our actual epistemic practices. It is also subject to the charge of conceding too much ground to a would-be sceptic. See Williams (2001).

characteristically or paradigmatically is, were it not governed by (and subject to assessment in terms of) such underlying norms.

- *Epistemic*. Paradigmatic assertional performances license others (interlocutors, audience) to re-assert endorsed claims and use them as fodder for their inferences. This "inference ticket" requires that speakers be treated as entitled to make those claims in the first instance. The default-challenge structure of entitlement accounts for this: assertors are treated as entitled to their claims unless there are motivated grounds to query or challenge them, in which case they are obliged to defend their claims in light of reasons. In this sense, then, we may account for the characteristic cognitive dimension of the assertoric practice as facilitating information sharing and pooling among sociable beings.

This account promises to capture central features of the assertoric game as we play it, especially so if we think that the game is intimately connected to discourse. So far I have attempted to show that a story can be told – if speculative – according to which sociable human beings could have good reason to elaborate a communicative practice with those design features (indeed, without being unrealistically cognitively sophisticated or cooperative). I shall now argue that our account can also accommodate a number of other intuitive features that paradigmatic assertions might be claimed to have. In particular, it is often asserted that a plausible account of assertion should explain that:

- as a (descriptive or prescriptive) norm, assertions are expected to be (a) *true*, (b) *expressions of beliefs* (sincere), (c) *justified* (warranted) or (d) *knowledgeable*,
- that assertions can be retracted (or perhaps should be retracted) under certain circumstances,
- that assertors are treated as *liable* should asserted claims prove incorrect.

So let us see whether and how our account can face these explanatory challenges.

To begin with, the normative dimension of *truth* is built into our account in the following sense derived from Price: for Y to treat X's assertion that *p* as (implicitly)

subject to the norm of truth is for Y to be prepared to treat X's assertion that *p* as incorrect simply on the basis of being prepared to dissent from it or to assert "not *p*." In other words: Y is prepared to treat X's assertion that *p* as incorrect simply on the basis of treating *p* as incompatible with his own commitments. In *that* event, X's assertion that *p* would not license Y to re-assert *p* or to use that claim as fodder for his own inferences. Even if X confidently claims that *p*, Y won't re-assert it on X's authority as long as Y has a commitment that Y treats as incompatible with *p*. X then does not have authority for Y. Y would grant no default entitlement to X which would license him to defer to X.[62]

Expectations that assertions express assertors' beliefs can be explained, too. In its moral connotation, *sincerity* might have to do more with general cooperative considerations that may not be specific to the assertoric practice as such (consider an analogy with promising). But even within the confines of the practice, we can explain why hearers could expect (rely on) speakers to "speak their mind." For why should one undertake responsibility to defend the asserted claim if one does not believe what one asserts in the first place? It is not easy to provide plausible reasons for lies. Relatedly, the risk of losing one's authority for (hence trust of) others might not be worth the risk. On the other hand, we also know that cheating is far from impossible. So it is perfectly alright to allow for insincere assertions as genuine assertions.[63]

In a similar vein, we can account for why speakers can be expected to *warrant* hearers to accept their claims. For assertors are treated as undertaking responsibility to defend their claims either by (a) appeal to observation, (b) inference from other claims serving as reasons, or (c) deference to assertions of other speakers. Or else they might

[62] Shapiro (2020) talks about this as a "defeating condition". On my account, Y's disapproval of X's claim, if addressed to X, may trigger an exchange of reasons between them, the situation being perceived as cognitively and socially unstable. But aren't there assertions and disputes concerning, say, matters of taste, such that X may affirm and Y deny that *p*, without, however, each assessing the other as making an incorrect claim? Price (1988) allows for "evaporative disputes" at the margin of factual discourse about such matters. Shapiro (2014) elaborates on this (without relativizing the notions of truth and falsity): the licensing potential of assertions may be restricted to a target audience supposed to share a similar perspective (e.g., a standard of taste).

[63] Cf. MacFarlane (2011).

neutralize potential queries or challenges. Note, however, that this does not imply that assertors are expected to possess reasons at the time of asserting something.[64]

As for knowledge, on the present account, assertions are naturally treated as *implicit claims to knowledge* (the authority over the claim being epistemic) backed up by the responsibility to vindicate the asserted claim when properly queried or challenged. Discharging this responsibility by vindicating one's asserted claim can be treated as a way of establishing that one knows what one asserts. [65]Perhaps, then, one may explain how something like a knowledge-norm can apply to assertions if speakers are sensitive to a general norm (that, however, is not specific to assertion) "not to undertake commitments one is not in a position to honor" (MacFarlane 2011).[66]

Retraction is also already built into the account. Should assertors not be able to discharge the conditional task-responsibility, they are expected to retract what they have asserted – as it were, making the original act "null and void."[67] This, in effect, cancels both their entitlement to (authority over) the original asserted claim and their dialectical obligation to defend it vis-à-vis appropriate queries or challenges.

---

[64] Cf. Shapiro (2020).

[65] I should note that Brandom (1994) goes even further. He characterizes what it takes for someone (X) to treat someone else (Y) as *knowing something* (that *p*) in terms of: (a) X attributing to Y a commitment with respect to *p* (typically assertional), (b) X attributing to Y the entitlement to that commitment and (c) X undertaking himself that commitment (endorsing it himself). Brandom claims that this is a pragmatic version of the traditional account of (attribution of) knowledge as a belief that is both justified and true. So (a) corresponds to the belief-condition, (b) to the justification-condition, and (c) to the truth-condition. Incidentally, this is quite close to Craig's account of identifying someone as possessing an epistemic authority (being a *good informant*) with respect to the issue of whether *p*. Yet, X may satisfy (a)-(c) without having to make *explicit* epistemic attributions. The explicit notion of knowledge (or cognates) is primarily manifested in epistemic attributions and serves an expressive function of explicitating what was implicit in the basic game of giving and asking for reasons, which can be played without it. Cf. Williams (2015a).

[66] Cf. MacFarlane (2011).

[67] Cf. MacFarlane (2011).

Finally, the account explains why assertors are treated as liable. As Brandom points out himself, they are responsible *for* what they claim *to* others. After all, the point of the practice is in part to license others to re-assert the claim and to use it as fodder for their own inferences. Should assertors claim something they cannot warrant (or do not believe), they are liable to corresponding treatment: at the very least, losing their authority (entitlement) and hence credibility in the eyes of others. Such an "internal sanction" may be sanction enough in the context of social life. [68]

As I understand the present account, it aims to capture paradigmatic cases of asserting something. Let's see whether and how it can accommodate cases that can be deemed non-paradigmatic.

It might be pointed out that assertors not only need not have supporting reasons on the occasion of asserting something, but they may even acknowledge this. *Prima facie*, this would seem to contradict the thesis that, *qua* assertors, they both claim authority over the asserted claim and undertake a conditional task-responsibility to vindicate it, which backs up their authority. *Secunda facie*, it should be noted that Brandom, for instance, allows for "bare assertions" - expressions of "mere beliefs" as opposed to implicit "claims to knowledge" - for which one does not have reasons that might answer potential challengers. Indeed, one might even acknowledge this by indicating that one disavows one's justificatory responsibility. This may or may not misfire as a way of entitling or licensing others to re-assert *p* or use it in their own inferences (it need not misfire if one finds a trustful audience, and/or if one has authority due to a good track-record as reliable assertor). But it is an act of assertion all the same, to the extent that assertor still invites others to take him at his word. That said, bare assertions can be considered exceptions from the rule, being parasitic on an up-and-running practice of making "normal" assertions that are not evasive in this particular way.

In a similar vein, I submit, we can deal with another potential challenge. One may wonder how the present account can make sense of assertions that are not made in a communicative context. Whom would I authorize? Who would treat me as being (default) entitled to the claim so that he would be licensed to infer other things from

[68] Cf. Shapiro (2020).

it? Who would call me to the task of vindicating the claim made should there be motivated reasons to query it? In response, it can again be said that these are derivative cases. Assertions are typically at home in communicative contexts. Furthermore, our account can accommodate such cases in the following way. In saying that *p* to myself with an assertoric force, I treat myself as entitled to that commitment – licensing myself to use it as a premise for further inferences - and also as owing it to myself (as well as to potential interlocutors) to defend it if I encounter motivated queries.

Finally, it may be pointed out that one can assert something even in a context in which there is little hope of convincing others, and therefore of licensing them to re-assert the claim or use it as a premise for their inferences. For instance, it being common ground between speaker and audience that audience deems speaker untrustworthy, there may be mutual knowledge that audience won't grant speaker authority over the claim and hence may not even care whether or not one can eventually vindicate the claim. Speaker may then assert something "on the record," knowing or presuming that he is just right. But others won't grant him authority backed up by responsibility. Such cases, I think, can be accommodated, too. Lack of credibility due to a bad track-record is a defeating condition that may prevent others from relying on him in the first place. In a way, he is liable to suffer these kind of sanctions because he compromised his assertional authority and credibility. Even though, in a given case, one's assertion is true and one can even support it by plausible reasons, others simply won't be entitled to accept it.

## 6. Conclusion

In this chapter I attempted to shed light on the core rational practice of making claims in the form of assertions. Having assumed that it is a normative practice interestingly, perhaps constitutively connected to reasoned discourse, I reconstructed its possible *raison d'être* in the form of pragmatic genealogy. I was specifically concerned to show why and how socially and cognitively interdependent ancestral human beings could have a good reason to elaborate a communicative practice with design features stressed by dialectical accounts. Finally, I argued that dialectical accounts can accommodate a number of intuitive features that paradigmatic assertions might be claimed to have.

# Chapter 2

## *Articulating a Space of Reasons*

### 1. Introduction

Formidable difficulties face anybody who aims at giving an account of the conceptual thinking and reasoning that characterizes human sapience. One way to approach this issue is to hold that a conceptualizing creature does at least two things. It singles out something and classifies or characterizes it *as* of a certain sort. At a minimum, that is, it *judges* that something (*a*) is thus and so (*F*). From this angle, concepts belong to judgements. In addition, conceptual thought is systematic and productive due to a structure of recombinable constituents.[69] It seems to be in the nature of concepts that if one can judge "*a* is *F*," then, for whatever *b* that one can also discriminate, one can judge "*b* is *F*," correctly or not. And for whatever concept *G* that one also possesses, one can judge "*a* is *G*."[70] In reasoning, relations between concepts and the constituent

[69] Cf. Fodor (1987), Fodor and Pylyshyn (1988).

[70] This is the gist of the "generality constraint". It was originally formulated by Evans (1982). Perhaps ranges of applicability of first-order concepts or predicates such as "*x* is red" and "*y* is divisible by 2" are restricted to different sorts of entities; then it won't be true that whatever concepts that one possesses

structure are reflected and exploited to inferentially support new judgements or revise old ones.

Thus conceived, conceptual thought has a language-like structure, as many thinkers have stressed. Judgements and inferences exemplify the (constituent) structure of sentences and arguments, respectively. At this point, however, a number of theoretical choices must be made by which theorists part ways. How are we to think of the relation between concepts and judgements? Is there a stock of basic concepts that exist and are what they are independently of each other (atomism), it being in principle possible to have just one concept *F* and judge just one kind of thing "*x* is *F*," for some discriminable kind of *x*-s? Or are concepts and judgments inconceivable apart from their relations, especially inferential, to other concepts and judgements within smaller (molecularism) or larger packages (holism)? Relatedly, should we theorize concepts and judgements primarily in terms of representational relations (reference, truth) or in terms of inferential relations or roles? How, for that matter, are we to understand the language-like character of conceptual thought? Is language *the* medium of conceptual thought? Or is language-based thought our *paradigm*, there being also forms of conceptual thought (classifying and, based on it, inferencing) not requiring language? What kind of language is at issue, anyway? Natural languages that we acquire and communicate in? If so, non-human animals or human infants are not concept-mongering creatures, right? Or is, perhaps, conceptual thought originally realized in languages of thought for which brains – of both animals and humans - are prewired?[71]

In the previous chapter I have already intimated that inferentialism offers one ambitious attempt to address this set of questions by giving pride of place to discoursing as both the paradigm and primordial medium of conceptualization. The idea was adumbrated by Wilfrid Sellars and fully developed by Robert Brandom:[72] determinate propositional claims materialize when a complex system of inferential and

---

can be applied to whatever entities that one can discriminate or single out. Even so, the fundamental point about the systematicity of conceptual thought remains.

[71] Cf. Fodor (1975).

[72] See Sellars (1953), Brandom (1994).

incompatibility relations is forged between them. From an epistemic perspective, to master a concept is to be able to make judgments with it primarily in the verbal form of claims. And to know what particular claim one is making, one must have a grip on its entrenchment in the economy of perception, cognition and action. More precisely, one must know its conditions of proper making and the consequences of its proper making.[73] Depending on the kind of claim, the former include perceptual situations non-inferentially supporting the claim and/or claims from which the claim can be inferred. The latter always include inferential relations to claims that the claim can be marshalled to support or, for that matter, exclude. It can also be marshaled to support practical inferences about the right thing to do that eventually issue into actions. From this angle, then, the core of any *linguistic* practice worth the name is a system of sentential expressions suitable for making, opposing and justifying claims, which therefore come to stand in relations of inferability and incompatibility. These relations confer inferential roles and thus propositional meanings on sentences. Because there are no relations without relata, this also presupposes a form of meaning holism.

Further complexities of this viewpoint need not detain us here. Suffice it to say that it has managed to attract a number of advocates and sympathizers as well as formidable opponents prepared to attack its core tenets.[74] I do count myself among the sympathizers but not direct advocates, because I have reservations about several articles of faith. In this chapter, I shall voice one such concern. I presuppose, for the sake of argument, the pragmatist-linguistic approach to the conceptual and the inferential approach to meaning in particular. But I challenge one of its core tenets. I also suggests a remedy. So what follows can be read as an attempt at internal but constructive critique.

The issue concerns the linguistic constitution of the semantogenetic space of reasons: What kind of structure must be elaborated for a communicative practice to involve utterances treated as standing in inferential relations of inferability and incompatibility? Brandom contends that a *minimal* such practice *need not* comprise anything beyond the production and interpretation of prelogical utterances linked by

[73] As Dummett (1981) put it.

[74] See Koreň and Kolman (2018) for an overview.

*material* relations of inferability and incompatibility. Indeed, it need not contain anything but assertional utterances of such sentences, which also fulfill the role of requests for reasons, when they are treated as incompatible with target assertions. Brandom's model of such a practice is an idealized "Sprachspiel" played by speakers who utter such sentences and, based on this, mutually attribute and keep score on assertional and inferential commitments and entitlements. It is recognized by Brandom and others that our languages are logically structured. But explicit logical structure is not required for the basic space of reasons. Rather, it is accounted for as a latecomer to be elaborated to fulfill a specific *expressive* need or function: i.e., to *explicitly* express (discuss, assess, negotiate) inferential relations that already *implicitly* structure prelogical practices of making and arguing from and to claims.

This so-called "layer-cake picture" of conceptual practices is both attractive and problematic. It is attractive, because it is *prima facie* natural to think of logic as a latecomer. After all, truth-functional operators operate on something. That thing may have a constituent (e.g., subject-predicate) structure. But it need not involve logical expressions.[75] The picture, however, is problematic. Or so I argue in this chapter. Having introduced the picture, I compare it with an alternative view, according to which (mastery of) logical devices do contribute to constituting a space of reasons relative to which determinate propositional meanings are individuated. Then I review the dispute between John McDowell and Brandom that brings into sharper relief the difference between those two views of how logic (embodying "semantic self-consciousness") relates to the space of reasons. According to McDowell[76], sapient beings capable of expressing and consuming determinate claims must have a self-conscious grip on the space of reasons. But without logical devices, McDowell submits, they cannot have it. So the layer-cake picture is untenable. This critique is

[75] Plus, this picture meshes well with the view advocated by Sellars and Brandom (among others) that rejects the "formalist" temptation to reduce all *valid inferences* to those that are valid on account of their *logical form*, in effect construing material inferences as enthymemes that need to be supplemented by appropriate bridge-premises to become valid in the preferred sense. The validity of material inference is both genuine and more basic. Formally valid inferences can be defined in terms of it as those that remain *materially valid* under all uniform substitutions of other than their logical elements.

[76] McDowell (2008).

suggestive but inconclusive at best, as the subsequent exchange with Brandom reveals. So I propose to shed a new light on the issue at hand from a genealogical perspective. In the spirit of a pragmatic genealogy, I imagine ancestral critters whose pragmatic repertoire is restricted only to moves of Brandom's "Sprachspiel". I argue, first, that if they are to make sense of each other`s performances in terms of inferential relations or roles, they will need to make it manifest to each other what utterances they reject and what inferences they endorse and reject, respectively. And, second, they will likely be pressed to elaborate certain pragmatic (dialectical) devices to this end, whose function will be partly expressive (of their attitudes) and partly constitutive (of inferential roles). Such tools may not be full-blown logical expressions, but they may serve the key role of manifesting what utterances and transitions between them one endorses and rejects, respectively. This suggests a *via media* between Brandom and McDowell, which invites us to rethink also the role of logic, broadly conceived, as serving both expressive and coordinative functions.

## 2. The Layer-Cake Picture of Inferential Practices

Suppose, for the sake of argument, that conceptual thought requires the social setting of communication and mutual interpretation. Then we might ask "what the trick consists in": i.e., what basic structure a practice must have for the "trick" to materialize. In Chapter 1 I pointed out that Brandom proposes that such a practice must involve claim-making utterances. A claim is essentially something that can give reasons for other claims and for which reasons can be provided.[77] Such utterances, accordingly, must have a specific *role*: being treated (a) as potential premises that, together with other claims, make it appropriate to make further claims (and inappropriate to make still other claims) and (b) as something for which justificatory demand might be in order to be discharged in a like manner. That is why practices of giving and asking for reasons (henceforth *PGAR*) are supposed to form the core of any linguistic practice worth the name. Further, performances within such a practice must be subject to norms determining when they are appropriately made. In particular, a subset of assertional and inferential proprieties creates a system of inferential relations between utterances and expressions serving as their vehicles. Here the idea is that a

[77] Brandom (2000, p. 193).

vehicle of *PGAR* – language - must comprise, at a minimum, a system of sentential expressions standing in relations of inferability ("to be a reason for") and incompatibility ("to be a reason against"). Such relations determine the inferential roles of sentences. Meanings of other expressions are accounted for as their systematic contributions to inferential roles of sentences in which they occur as components.[78]

To drive the point home, consider a thought that can be expressed by uttering the sentence:

1. This is red.

"Naïve" empiricist accounts would treat it as a kind of cognitive response that owes its conceptual content to the fact that tokens of this response-kind are reliably caused by or correlate with sensory stimuli or perceptual situations of a certain kind. Yet, this does not distinguish a genuine thinker from a well-trained parrot who reliably tokens "This is red" in situations of just that kind.[79] Therefore, the difference consists in what else the thinker, but not the parrot, is capable of doing; in particular, what relations to other judgments the thinker is capable of recognizing. Inferentialists are adamant that one has no—or, at best, a very poor—idea of what that sentence expresses if one has no understanding how *P* inferentially relates to a host of other expressions such as

2. This is colored. (which can be inferred from 1),

3. This is crimson. (from which 1 can be inferred),

4. This is white. (which is incompatible with, hence excluding co-assertibility of 1),

and so on.

The same diagnosis applies, *mutatis mutandis*, at the level of judgment or conceptual thought.

The relations between (1),…(4) are material-inferential relations between prelogical sentences, so called because they do not hold in virtue of the formal-logical structure. What claims such sentences can be used to express depends in part on their

[78] Cf. Peregrin (2014).

[79] Sellars (1956).

*narrow inferential articulation*: their inferential links to other assertibles typified by material-inferential relations of the sort specified above. In addition, non-inferential circumstances of their assertibility should be given due recognition: proprieties of *language-entry* transitions (from observation to reporting) such as the correct assertibility of "This is red" in the visual presence of a red object. So should non-inferential consequences of their assertibility: *language-exit* transitions (from claims to actions) such as the reasonableness of not eating some red stuff when taking it to be toxic and wanting to avoid getting poisoned. Call this a *broad inferential articulation* of their meanings. The justification for this label is that even though such circumstances or consequences are not inferential, they are nonetheless mediated by sentences that are inferentially linked to other sentences.[80] To know their meanings thus involves mastery over such inferential proprieties and over proprieties governing language-entry transitions and language-exit transitions issuing into intentional action.

Ultimately, inferential roles (meanings) are to be explained in the pragmatist "use-theoretic" style: i.e., as being conferred upon the expressions by assertional and inferential proprieties governing their use in a communicative practice of a certain kind. Brandom's deontic scorekeeping model is designed to connect the pragmatic and the semantic level by specifying the "normative structure" of a minimal linguistic practice apt to be reconstructed in terms of inferential relations. The strategy here is to account for what is assert*ed* via proprieties of assert*ing* and inferr*ing* themselves reconstructed in terms of deontic scorekeeping. The core idea, for our purposes, is as follows.

The model characterizes the structure of a linguistic (conceptual) practice in terms of speakers incurring discursive *commitments* to which they might or might not be *entitled*. Commitments and entitlements are basic normative statuses. They serve to explicate what it takes for an utterance to be correct or appropriate (roughly, it is correct or appropriate for one to do what one is committed or entitled to do). Their undertaking and attributing, then, are practical attitudes adopted by speakers toward

[80] The transitions themselves are not immune to criticism and demands for justification. In this sense, observation reports do not form a self-standing language game that one could play without playing an inferential game. See Sellars (1954), (1956) and Brandom (2015, p. 124).

utterances of themselves and others. They serve to explicate what it takes to treat someone's utterance as correct (something implicit in what one does, as opposed to being expressed in what one claims). By undertaking and attributing normative statuses, agents are said to mutually keep score on their commitments, entitlements and on changes in their normative standings (deontic scores) effected in the course of a social exchange. Utterances with the force of claims are explicated in terms of how they affect the normative standings of speakers and hearers, respectively. Basically, speakers incur commitments or responsibility to support such utterances by reasons (or otherwise vindicate their entitlement to corresponding claims) when properly challenged (until such a challenge arises, speakers are granted a default entitlement). They are also treated as being precluded from making other utterances with that force and as licensing others to re-make and defer to original utterances as it were on their authority.

This account of the scorekeeping model is sketchy. But let us suppose we can recognize in it claim-making utterances (assertions). In addition, their meanings (as inferential roles) are modeled in terms of inferential relations that scorekeepers forge between them. Brandom distinguishes three kinds of such "inheritance" relations that practitioners keep track of in the course of playing a basic game of giving and asking for reasons:

> (1) In keeping track of *commitment-preserving relations*, scorekeepers treat those whom they take to be committed to a claim as being thereby committed to some other claims (commissive consequences).
>
> (2) In keeping track of *entitlement-preserving relations*, scorekeepers treat those whom they take to be entitled to a claim as being thereby entitled to some other claims (permissive consequences).
>
> (3) In keeping track of *incompatibility relations*, scorekeepers treat those whom they take to be committed to a claim as being thereby precluded from being entitled to some other claims.

(3), in turn, grounds *incompatibility entailments*: assertible $p$ entailing in this sense assertible $q$ if everything materially incompatible with $q$ is materially incompatible with $p$. Cutting the long story short, Brandom's bold claim is that if the scorekeeping

practice reaches a point of complexity when speakers treat one another as subject to such relations, we can interpret them as engaging in a basic linguistic practice. That is, then we are warranted to interpret their utterances as expressing propositionally meaningful, because inferentially articulated, claims.[81] For then they are able to assess the particular significance of a given utterance (how it changes the score) in a given context based on attaching a certain inferential role to a corresponding sentence-type and bringing it to bear on the given context (partly determined by the current score, by their lights).[82] At the same time, interpretation within the score-keeping model is bound to be a holistic-perspectival manner. In general:

> […] what a given endorsement of [a] claim commits one to, is entitled by, and is incompatible with depends on what else one is committed to, on what collateral information is available as auxiliary hypothesis for the inferences in question […] (Brandom, 1994, p. 477)

Because different scorekeepers bring to bear different sets of collateral commitments, there is no guarantee that they will converge on exactly the same interpretation of the significance of a given utterance. So, rather than construing linguistic exchange on the model of a sender conveying a *shared meaning* to a recipient, we should think of it as based on a *shared practice* of normative interpretation and practical abilities for navigating between various perspectives. To understand a given performance is to understand how it can acquire different significances from different individual perspectives and be able to translate back and forth between them in communicative ventures.[83]

---

[81] In addition to these three „semantic" dimensions, there are three social-pragmatic dimensions of the articulation of commitments pertaining to observational responses, practical inferences issuing into intentional action, and the kind of inheritance of normative statuses characteristic of assertings. Cf. Brandom (2010).

[82] Cf. Brandom (1994, p. 190).

[83] This is also supposed to ground the process of instituting *objective conceptual norms* governing the practices of giving and asking for reasons. The idea is that scorekeepers become sensitive to the difference between commitments acknowledged by speakers and commitments consequentially undertaken by them (because scorekeepers, though not necessarily speakers, take the latter to be entailed by the former). They might thus attribute to speakers' statuses that outrun those avowed by speakers,

In principle, a scorekeeping practice can satisfy these desiderata without comprising anything beyond the production and interpretation of prelogical utterances. Or so Brandom submits:

> [...] there is nothing incoherent about a language or stage in the development of a language in which the only vocabulary in play is nonlogical. (Brandom, 1994, p. 383)

Indeed, such a practice is considered *ground-level* and *autonomous* (self-standing):

> [...] a language game one could play though one played no other. (Brandom, 2008a, p. 27)

On this view, prelogical speakers and interpreters are able to identify basic assertional and inferential moves with prelogical sentences, endorse them as good or reject them as bad. It is assumed that they can manage this implicitly, e.g., by practically treating speakers

- who assert some "*P*" as being thereby committed to, entitled to or precluded from asserting "*Q*,"
- who assert some "*R*" as thereby challenging one's entitlement to "*P*,"
- who assert some "*S*" as thereby vindicating one's entitlement to "*P*,"
- etc.

Based on this, the three inferential relations can be forged between prelogical sentences. If this is enough, logical structure is not required for the basic conceptual practice. In Brandom's idiom, prelogical speakers may already be *rational* creatures who are semantically *conscious*. On the other hand, their possibilities are seriously limited, for they cannot yet reflect on what they are doing. Prelogical speakers cannot express, explicitly endorse or oppose implicit norms governing their activities, making

---

thereby developing a sense that what is appropriate to do or say (what one is committed or entitled to) does not coincide with what (any)one takes to be appropriate to say or do. For the purposes of the present chapter there is no need to go into these subtleties. To the extent that practitioners come to treat (if only implicitly) one another's performances as subject to such norms, they take part in shared practice within which performances possess genuine conceptual and rational significance. I have more on this topic in Chapter 6.

them into the topic of the game of giving and asking for reasons. To make this possible is the singular *raison d'être* of broadly *expressive* notions. Of these, logical notions form a subset specifically suited to *make explicit* material-inferential proprieties governing prelogical sentences. Paradigmatically, the conditional "If *A*, then *B*" allows speakers to explicitly endorse, in claimable contents, something that they could before practically endorse only in what they *do* with nonlogical sentences: that is, that *B* is inferable from *A*. And negation then allows speakers to make explicit incompatibility relations between prelogical claims—for example, in the form of claims like "If *A*, then not *B*."

From this perspective, elaboration of logic is an important milestone making it possible to reflect on the rules implicitly governing the basic prelogical game. It thus transforms prelogical speakers into *logical* creatures who are said to be semantically *self-conscious*. This tenet of the inferentialist view is encapsulated in the following claim:

> *Expressive role of logical vocabulary* (*ERL*): logical vocabulary is elaborated from the basic prelogical linguistic practice, serving the expressive function of making explicit the material-inferential proprieties implicit in this practice that confer propositional contents on nonlogical sentences (and sub-propositional contents on their subsentential components, if any) in which its performances are cashed out.

*ERL* implies the *layer-cake picture* of language (as Brandom 2007a, p. 206, 209, 210 labeled it). It is so called because it reconstructs linguistic practice as divided into layers deploying vocabularies of increasing complexity and expressive power. At the ground level is a material-inferential practice operating with nonlogical expressions. In principle, it can stand on its own. Because the logical layer is supposed to (be elaborated to) make its implicit semantic structure explicit, it cannot contribute to its constitution in the first place - that is, to the articulation of the primordial space of reasons.[84]

[84] Formally speaking, introducing logical items to the prelogical language must not forge new inferential links between sentences of the original fragment. See Brandom (2000a, pp. 68-69).

## 3. An Alternative View

Admittedly, one cannot play purely logical language games though one plays no other language games, specifically no prelogical language games. But this does not exclude the possibility that logic may somehow shape the space of reasons relative to which propositional meanings, including the meanings of nonlogical sentences, are individuated. Shortly, we shall have an occasion to see that Brandom is aware of this dialectical possibility, though he consistently sticks to his guns. Meanwhile, we should note that some of his fellow travelers appear to hold views that are less clear in this respect.

In his representative book on inferentialism, Jaroslav Peregrin officially subscribes to *ERL* when he alleges that

> [...] nonlogical vocabulary and the rules governing it constitute the basis of language while the single role of the logical vocabulary is allowing us to make the material inferential links explicit. (Peregrin, 2014, pp. 26–27).

And he concurs that this "basis of language" is autonomous in the following sense:

> [...] there can be a self-standing purely empirical language. Logical vocabulary presupposes inferentially structured nonlogical sentences, but a language (protolanguage?) consisting of only empirical sentences can exist as a matter of principle without this explicitating superstructure. (Peregrin, 2014, p. 113)

However, in other places, Peregrin flirts with a different view of the function of logical devices. So he illustrates the inferentialist approach to semantics (in terms of inferential rules and inferential roles reflecting them) by considering properties of a "Toy Language" (*TL*).[85] *TL* offers a simple model of a material-inferential fragment of language operating with nonlogical expressions. It consists of a stock of terms and predicates, implicit syntax for generating complex (sentential) expressions from those terms and predicates, and inferential rules generating their inferential semantics (including rules for appropriately making language-entry and language-exit moves). For example, a sentence of *TL* that has a term-predicate form would have an inferential

[85] Peregrin (2014, chap. 3).

(or toy-inferential) role specified by the rules determining in what circumstances it could be correctly uttered (in assertoric mode), from what (sets of) other sentences it is inferable from, and what (sets of) other sentences are inferable from it. The details need not detain us here. What matters is that Peregrin does not stop here but asks: what would have to be added to *TL*'s repertoire to make toy-sentences into genuine sentences expressing *propositional* meanings? His answer is as follows:

> In fact we would need resources that are not available in our toy language, resources that would structure the sentences of the language into a "logical space." In particular, for every sentence of the language we would need something as a complement (contradictory sentence); for every two sentences we would need something as their meet (disjunction) and join (conjunction) and so forth. As this is not the case, the sentences of our toy language do not really express propositions, do not have genuine meanings. (Peregrin, 2014, p. 56)

Unpacking this, what Peregrin suggests is that propositional meanings are individuated by their positions in "the space of reasons," in which they can be contradicted (have a complement), disjoined (meet), conjoined (join), etc. Indeed, Peregrin expands on this point by saying that this is to view genuine sentences as forming something like a Boolean algebra. Thus, a language capable of expressing propositional meanings must contain some basic (Peregrin calls them "native") logical operations. *Prima facie* at least, it is logical vocabulary that provides for such operations: "resources that would structure the sentences of the language into a 'logical space.'"

I hasten to add that Peregrin is not unambiguous on the last point. On some occasions he sticks to *ERL*, saying that the prelogical practice might already be complex enough to institute the space (or web) of reasons linking expressions by material implications and incompatibilities, owing to which links they come to stand in *implicit* relations of contradictoriness, meet, join, etc. Thus an algebraic structure can be discerned in a prelogical language such that its "vertices" can be made explicit by means of "native" logical operators including negation, disjunction, conjunction, or the conditional. Such comments may lead us to cancel the "*prima facie*" suggestion that logical operators are required to establish the logical space. The space, though

implicit, is already there. The function of logical operators is to make it (its vertices) explicit.

On other occasions, however, Peregrin again suggests that such expressions contribute to the establishment of the logical space relative to which sentences acquire their contents. He implies this when talking of logical rules in the following spirit:

> Logic, therefore, is primarily a matter of rules, rules that form our "space of meaningfulness." Logical words, as a species of the "cognitive tools" that our sounds/scrawls are transformed into when they become meaningful, constitute the fundamental pillars of the whole "space of meaningfulness." (Peregrin, 2014, pp. 238–239)

And it is clear from the context of his discussion that Peregrin has in mind rules of inference such as *modus ponens*, which involve logical vocabulary. Indeed, such rules are supposed to be the determinants of inferential roles of specifically logical expressions (here of conditional). So it seems as if the space of reasons comes into being with basic logical operators governed by such rules. This supports the "*prima facie*" suggestion that such operators provide resources required to establish such a structure.

Thus Peregrin seems to oscillate between *ERL* and an alternative conception of logic whose gist we can summarize thusly:

> *Constitutive role of logical vocabulary* (*CRL*): full-fledged propositional contents are constituted only relative to a finely structured "logical space" (of reasons), which comes into being only with the introduction of basic logical vocabulary.

But isn't this like wishing to have one's layer cake while eating it too? Clearly, *CRL* and *ERL* appear to be commitments to which one cannot be entitled at the same time. *ERL* implies that logic merely makes explicit content-conferring material-inferential proprieties implicitly structuring the prelogical practice, and hence does not constitute propositional contents expressible by non-logical sentences. Whereas *CRL* implies that logic contributes to the constitution of the very space of reasons relative to which propositional contents—including those expressible in non-logical sentences—are identified and individuated in the first place. If so, can the prelogical

game be *autonomous* and logic *expressive* in the way they are officially stated to be (in *ERL*)?

## 4. Brandom vs. McDowell on the Space of Reasons

It seems that something has to give. The orthodox inferentialist line is to stick to *ERL*, while rejecting (or ceasing to flirt with) *CRL*. This line is pursued by Brandom. A version of it is pursued by Peregrin when he talks about sentences being localized in the implicit space of reasons whose vertices are made explicit by means of logical expressions.

As I have intimated, Brandom sticks to his guns and defends the orthodox line in response to critics who have challenged the layer-cake picture of language. John McDowell, in particular, has voiced the worry that "nothing can be made explicit" (not even assertional commitment) without a command of basic logical vocabulary.[86] Brandom recapitulates the objection as follows:

> It can sensibly be argued [...] that we must be able to argue about whatever it is that entitles us to a commitment, if the whole game is to count as rational, hence as semantogenetic. McDowell, for instance, argues along these lines that the idea of a language without logical vocabulary is unintelligible. In such a putatively rational but not yet logical practice, one could challenge claims, but not inferences. For one has no way to say that one does or does not endorse the inference from *p* to *q*, unless one has the expressive resources provided by conditionals. (Brandom, 2010b, p. 319)

As McDowell puts it himself:

> Semantic self-consciousness is required, and hence a command of logical vocabulary is required, if one is to be able to make anything explicit—including explicitly undertaking assertional commitment. (McDowell 1997, p. 162)

explaining that

[86] McDowell (1997, p. 162).

> [...] self-consciousness requires the capacity to make the goodness of materially good inferences explicit, and hence command of logical vocabulary [...]. (McDowell, 1997, p. 162, footnote n. 4)

What McDowell means is that there can be no game of giving and asking for reasons worth that name that is not also a logical game, so no gameplayers sensitive to "the force of a better reason" who are not also logical creatures capable of semantic self-consciousness. This is one way in which *CRL* can be motivated. If logical vocabulary is required for the constitution of genuine *PGAR*, and such practices are required for the constitution of full-fledged propositional contents, then logical vocabulary is required for the constitution of full-fledged propositional contents.

In reply, Brandom acknowledges that discursive practices require abilities for the "critical assessment of the credential of claims and reasons for them" (Brandom 1997, p. 193). Yet he thinks that a ground-level discursive practice is possible in which practitioners practically treat claims as materially incompatible (by making materially incompatible counterclaims) and inferences as materially good or bad.

> Participants in a discursive practice that is rational but not yet logical would have no way to reason or resolve disputes about their inferential practices. They would not be semantically self-conscious. They would not be very much like us. But could they still claim that things are thus-and-so, even though they were deprived of this dimension of critical self-consciousness. (Brandom, 2010b, p. 319)

Elsewhere, he expands on this point as follows:

> Just as even in the absence of logical vocabulary, scorekeepers can treat the contents of claims as materially incompatible [...] so they can treat inferences [...] as materially good or bad. [...] [I]nferential articulation and the critical assessment of doxastic and inferential commitments, and so genuinely conceptual contents, are intelligible even in advance of the capacity logic gives us to say explicitly what in the more primitive practices remains implicit in what is done by scorekeepers. (Brandom, 1997, p. 193)

To further clarify what is at issue here, it is useful to distinguish a strong and weak notion of semantic self-consciousness. On the strong notion, semantically self-

conscious beings must be able to *critically discuss* or *argue* about their inferential practices. If semantic self-consciousness amounts to this kind of intellectualist capacity, it is easier to sympathize with Brandom when he says that it is not a necessary component of discursiveness (sapience). On the weak notion, semantically self-conscious beings must be able to make an aspect of inferential practice explicit in the first place. This is a prerequisite for arguing about it. This more basic kind of self-consciousness concerns making explicit "goodness of materially good inferences" (and, let us add, incompatibility relations). Both thinkers assume that the linguistic devices implementing it are logical expressions such as the conditional and negation. The basic issue is: can we make sense of practitioners who interact in an up-and-running *PGAR* while having at their disposal no logical devices making explicit what claims they take to be inferable from what claims or what claims they take to conflict? For McDowell, the answer has to be negative, whereas Brandom replies that he "does not see why not." What one claims to be unintelligible (in principle), the other claims to be intelligible (in principle).

## 5. A Genealogical Perspective

McDowell could have adduced less than compelling considerations to support his claim that there can be no genuine *language* game without logical expressions, and so no rational creatures who are not also semantically self-conscious. I am less sure, though, that Brandom won the war, since it is open to debate whether no pertinent considerations exist. Part of the problem is that their arguments revolve around the issue of the *intelligibility* of a prelogical discursive practice. Because they have different intuitions about what the game of giving and asking for reasons (and sensitivity to reasons) involves, they reach opposite conclusions. McDowell thinks that some critical-reflexive perspective on inferential practices is required that cannot be had without logical devices. For Brandom, by contrast, prelogical practice with a critical dimension is conceivable without logical devices, although it is not yet self-conscious in that critical assessment of performances is implicit in doings and practical attitudes.

I propose to transpose the issue into another key. It may be productive to look at it from a perspective of rational reconstruction in the specific form of imaginary genealogy.

Imagine that our prelogical ancestors evolved a practice of communication—including the linguistic devices required for its implementation—of the kind that the inferentialists' description of the minimal prelogical discursive practice presupposes. Brandom's description of it is rather *austere* on the face of it. Basically, it is characterized as an exchange of nonlogical utterances with a declarative force, including those utterances supposed to play the pragmatic role of challenges and justifications. Some utterances are prompted by, and prompt, other utterances. Other utterances are elicited by environing stimuli or issue into actions.[87] True, Brandom talks about practices of *giving* and *asking* for reasons. This suggests a pragmatic structure realized by performances with complementary discursive functions (claims, challenges, and queries). Yet the idealized description (Brandom's "Sprachspiel") has us imagine that a suitable challenge to a claim-making utterance discharges also the role of requests for reasons, the challenge being realized by another declarative utterance taken to be incompatible with the target utterance.[88] Crucially, practitioners have no expressive devices for making *explicit* which utterances they take to provide reasons for or against which other utterances. Given this description, we might consider how plausible or likely it is that such modestly equipped critters come to make sense of each other`s utterances in terms of inferential and incompatibility relations.

I next argue that, at a minimum, our imaginary speakers will need to make it manifest to each other what utterances they reject and what (material) inferences they endorse as good and reject as bad, respectively. This being so, they will likely be pressed to elaborate certain pragmatic (dialectical) devices to this end, whose function will be partly expressive (of their attitudes) and partly constitutive (of inferential roles).[89]

---

[87] Of course, there are scorekeeping (deontic) attitudes as well. But it is maintained that scorekeeping is implicit in discursive exchanges—prelogical beings cannot yet ascribe scorekeeping attitudes to each other.

[88] Brandom (1994, chap. 3, pp. 191–193) discusses challenges (as well as queries, deferrals, and disavowals) under the rubric of "auxiliary speech acts."

[89] It could also be argued that only "shared" standards of correctness determine the space of inferential proprieties (and incompatibilities) relative to which objective propositional meanings are individuated.

To begin with, note that declarative utterances of nonlogical sentences do not wear marks of playing the role of a premise or conclusion on their sleeves. So practitioners won't have readily available for practical assessment reason-giving sequences consisting of a premise and conclusion. This complicates their task, because in order to manifestly endorse (as good) or reject (as bad) inferences, they must identify relevant sequences. Moreover, even if they register such sequences, it remains to be seen how they could unambiguously indicate to one another (hence register) that they endorse as correct a material inference from, say, "*P*" to "*Q*." If *A* acknowledgingly utters "*Q*" (or otherwise practically endorses it) after *A* has acknowledgingly uttered (or otherwise endorsed) "*P*" (or after his or her interlocutor *B* has uttered or otherwise endorsed "*P*"), this might be taken in several ways by scorekeepers (*B* included). For instance, they might read it as *A*'s undertaking of a commitment with respect to "*Q*" that is independent of "*P*." Here one aspect of the difficulty lurks. With that much leeway for alternative readings of communicative exchanges, it is unclear how practitioners could reasonably coordinate their sense-making (score-keeping) activities. It is also unclear how they could ever reach the tipping point of keeping score on the key inferential (inheritance) relations (between commitments and entitlements). It being so ambiguous as to *what is to be taken as giving reason for what*, we should wonder whether the imaginary game deserves to be

---

Without making use of some devices indicating that something is endorsed (rejected) as a reason for (against) something else, communicative interactions would be too ambiguous to provide for such standards. In fact, commentators have argued that Brandom`s normative pragmatism cannot do justice to such norms: individualistic activities (of multiple interacting agents) of assessing performances are not up to the task. For all Brandom says, his scorekeepers may not even play "one language game" if that means to "play by the same rules". For each individual brings to bear his own perspective to identify or forge assertional and inferential proprieties and incompatibilities. True, other interactants might view the situation differently. But the question is how such a dialectic ("I"-"Thou" interpretive activities) could ever create a shared communicative practice governed by objective conceptual norms (as opposed to subjective attitudes of taking something to be correct). Cf. MacBeth (2010). These are important concerns. I consider them in Chapter 6. But my critique here applies even if we assume, with Brandom, that linguistic communication need not be based on agreed upon (shared) norms or meanings. All it assumes is that linguistic communication is about making one another intelligible.

described as the game of making claims, and hence as an autonomous linguistic practice.

In reply, it could be said that reason-giving performances must be considered in the proper dialectical context of challenging performances. After all, to claim something is to undertake a corresponding discursive commitment such that the author of the claim might or might not be entitled to it (might be so treated by scorekeepers). Given the default-challenge structure of entitlement, the author is treated as undertaking a conditional task-responsibility to justify one's claim (to vindicate one's entitlement to the commitment undertaken in making the claim) if appropriately challenged (otherwise he or she is treated as enjoying a default entitlement to the commitment).[90] Accordingly, for one to be called on to the task of giving reasons for a claim, one must be appropriately challenged in the first place. Thus, if *A* utters "*Q*" (or otherwise endorses it), *B* might challenge *A* by uttering some "*R*" that *B* takes to be incompatible with "*Q*." If *A* responds by uttering "*P*," *B* might take it that *A* treats "*P*" as a reason for "*Q*."

This rebuttal presupposes that prelogical critters can make challenges manifest based on registering some incompatibility (in the sense that a commitment to one claim precludes an entitlement to some other claim). But consider that what declarative utterances are taken to be incompatible by individual scorekeepers depends on what other collateral information (commitments) they also have. Since scorekeepers differ in this respect, establishment of the shared space of material incompatibilities is liable to the problem of indeterminacy. What *B* takes to be incompatible with "*P*" might be compatible with "*P*" for *A*, if *A* has the right constellation of collateral commitments. Or *A* may fail to consistently track his or her commitments and consequently fail to register some incompatibility registered by *B*. But, again, nonlogical declarative utterances do not wear a mark of incompatibility on their sleeves. So, if *A* does not

[90] Recall that scorekeepers treat *A* as possessing a default entitlement to the commitment if they take it that no appropriate challenge has been made and that *A* has not undertaken incompatible commitments. Appropriately challenged, *A* can discharge the conditional task-responsibility either by making other claims from which the commitment is inferable, or by deferring the justificatory burden to some peer who has previously authorized *A* to undertake the commitment. Should *A* not be willing or able to defend the commitment appropriately, scorekeepers would treat him/her as no longer entitled to it.

register the incompatibility between "*P*" and "*Q*" that *B* registers, *A* might fail to register that *B* is challenging his or her utterance of *P* by uttering "*Q*." To drive the point home, consider the following exchange adapted from Huw Price:[91]

*A*: "Fred is in the kitchen." (Sets off for kitchen.)

*B*: "Wait! Fred is in the garden."

*A*: "I see. But he is in the kitchen, so I'll go there." (Sets off.)

*B*: "You lack understanding. The kitchen is Fred-free."

*A*: "Is it really? But Fred's in it, and that's the important thing." (Leaves for kitchen.)

Here *A* reacts as if not appreciating that *B*'s utterances are incompatible with his or her own (*B* intending them as challenges to *A*'s utterance). This is something that can happen.[92] The problem would likely be more daunting for exchanges of prelogical creatures with different collateral commitments, who produce and consume declarative utterances only. Given the conditional-task responsibility to justify one's claims (or commitments) via-à-vis appropriate challenges (to be recognized as such), these considerations bring back the initial problem. One cannot hope to circumvent this difficulty by asserting that *A* and *B* might have arrived at a shared sense of material incompatibilities via a shared sense of some material-inferential proprieties or improprieties. For this is the problem we have started with in the first place.

Incidentally, this gestures toward a related difficulty for prelogical creatures: how are they to make it sufficiently manifest—out in the open—that they reject an inference from "*P*" to "*Q*" as bad? Clearly, even if *B* rejects (challenges) "*Q*" (e.g., by uttering some expression "*R*" that *B* takes to be incompatible with "*Q*") after *B* (or *A*) has uttered (or otherwise endorsed) "*P*," this might still be taken in a number of ways. Again, for instance, *B* might reject (challenge) "*Q*" independently of "*P*." And if, for whatever reason, *B* already happens to have among his or her collateral information

[91] Price (1990, p. 224). Of course, this is not to be taken seriously as exemplifying exchanges of our prelogical ancestors.

[92] Price uses this example to argue for a pragmatic role of denial with the significance of negation. More on this issue later.

(commitments) "*Q*," rejecting "*Q*" would not be a particularly happy way of rejecting the inference from "*P*" to "*Q*" as bad. This consideration, I take it, further reinforces the initial worry that prelogical creatures could have a hard time to establish a common ground of inferential norms required for full-fledged propositional contents. Any attempt to disambiguate the practice in this respect by invoking challenges will likely suffer from the same kind of problem that I have highlighted above.

In all, if creatures have just the resources that the austere description of the prelogical practice gives them, a problem looms large of how they are to make it sufficiently manifest—thus how they are to coordinate —what they treat as giving a reason for what or, for that matter, of what to treat as challenging (asking reasons) for what.

It suggests itself to say that what practitioners need are some expressive devices that would enable them to indicate and register that they reject (challenge) some claims and that they endorse or reject inferences from claims to claims. At first blush at least, logical devices—in particular, the conditional and negation—appear tailor-made for this task. Having at their disposal an idiom with the significance of "If *P*, then *Q*," scorekeepers could make it clear to one another that they endorse the inference from "*P*" to "*Q*" (the conditional functioning somewhat as an inference-license in Ryle's sense).[93] And an idiom having the significance of "Not:.." would provide them with a means of making more manifest incompatibilities between claims (commitments) in challenges. Eventually, such devices would help them to make it more manifest that they reject an inference from "*P*" to "*Q*" as bad, giving them something with the significance of a negated conditional "Not: if *P*, then *Q*."[94] This would help them to

[93] Ryle (1950). To encapsulate one's endorsement of (the goodness of) an inference in a conditional claim is not the same thing as drawing one, since one need not be in a position to claim (endorse) its antecedent or consequent (whereas in drawing an inference one claims [endorses] both the premise and the conclusion—at least on the account of material inference that Brandom and Peregrin work with).

[94] If we grant that appropriate challenges detach the conditional task-responsibility to give reasons for a claim, then the negative construction could be considered the more basic expressive device of the two. That is to say, the conditional would be a useful but dispensable device if the utterance of "Not: *Q*" were established among practitioners as a conventional way of making a challenge to provide reasons for "*Q*" that the challengee could then meet with claiming "*P*," thereby making it manifest that he or

determine *what is treated as a reason for what* and *what is treated as a reason against what*. With such tools in place, it is easier to see how a space of reasons could be instituted possessing those features that Peregrin intimates are required for genuine sentences expressing propositional contents (having the contradictory, meet, join, etc.). But, of course, the proposal that logical devices contribute in this way to constituting the pragmatic structure typified by *PGAR* is not consistent with the core inferentialist idea that a prelogical practice is a basic-autonomous linguistic practice that does not require any semantic self-consciousness at all.

This is not the end of the matter, though. One might voice the following reservation: "Your considerations show, at most, that the culprit is the austere description of the prelogical practice (which is an optional element of the inferentialist doctrine). But, for all you have said, there might be a way of equipping prelogical beings with linguistic devices that, albeit not genuinely logical, would enable them to openly endorse, reject, or challenge inferences and claims. Hence, your considerations do not undermine the idea that a minimal discursive practice is prelogical and that logical devices are pragmatically elaborated from such a practice so as to play a distinctive explicitating role (a core tenet of the inferentialist doctrine)."

The suggestion is that we should go beyond the austere description of the prelogical practice. So we should consider whether our imaginary prelogical ancestors could make progress on this front without encountering the need to elaborate tools enabling them to make reasons explicit.

Let's return to the problem of making manifest reason-giving moves and their endorsement. It could be a significant boost if prelogical game-players had at their disposal some inference markers (playing the role of "So," "Hence," "Thus," and the like) if not operators connecting sentences in conditional compounds (embeddable in other sentences of increasing complexity). By means of inference markers, they could unambiguously indicate to each other (hence register) that an inference from "*P*" to "*Q*" is underway. Now, inference markers do not behave quite like sentence-forming logical operators (here the conditional is relevant). A piece of discourse embodying an

---

she endorses a material inference from "*P*" to "*Q*." However, to make it manifest that one rejects an inference, something like the conditional might be needed after all.

inference is not a claim assessable as true or false (though consisting of a premise-claim and a conclusion-claim that are so assessable). Relatedly, unlike logical operators, inference markers do not embed, and inferences marked by them are not fit to play the role of premises or conclusions. Hence the suggestion: give prelogical critters access to inference markers enabling them to indicate inferential transitions.

A *prima facie* problem with this proposal is that the introduction of inference markers into the prelogical practice is dangerously close to transforming it into a *rudimentary logical* practice with elements of semantic self-consciousness. My reason for this claim is simple: in exchanges of the sort "*P*." "So *Q*." one does not just make manifest that one draws an inference; one also openly endorses it (as a good one). In this specific respect, inference markers are akin to expressions (paradigmatically conditionals) that, according to inferentialists, make explicit inferential relations previously implicit in their practices with nonlogical expressions and sentences. So unless one comes up with a further argument to the effect that the elaboration of dialectical devices typified by inference markers does not introduce an element of semantic self-consciousness into *PGAR* (making explicit reason-giving links), this proposal does not mitigate my critique of *ERL* and the layer-cake picture of language. I have yet to see how such an argument would proceed, given the apparent analogy between the role of inference markers and the explicit conditional pointed out above.[95]

Let's continue our exploration of how a prelogical practice could be enriched whilst dispensing with inference markers, along with logical operators. A promising suggestion on behalf of inferentialists is to appreciate the need for a variety of speech acts alongside claim-making performances. In particular, if *A* and *B* could address one another with a certain kind of pointed queries, it should be easier for them to establish

[95] It seems to me that if one can be said to explicitly endorse (the goodness of) an inference by means of uttering the conditional "If *P*, then *Q*," one can also be said to explicitly endorse it in producing a piece of discourse: "*P*." "So *Q*." After all, the difference cannot be that the former, unlike the latter, presupposes a normative vocabulary on the part of speakers (or that it is a disguised meta-linguistic claim). Admittedly, there are differences. But the crucial consideration is that, one way or another, inferential commitments are rendered manifest in a piece of discourse and as such can be registered, tracked, and eventually endorsed (or rejected) by other scorekeepers. Since inference markers display a less complex syntactic behavior than sentential operators (in particular, they do not embed), one might speculate that, owing to their expressive role, they could have been precursors of the latter.

a mutual understanding as to what (inference or claim) is at issue.[96] After all, raising questions is a fairly straightforward way of "asking for reasons," while making claims is a straightforward way of "giving reasons" for (challenged) claims (subject, let us assume, to the default-challenge structure of *PGAR*). For instance, if *A* utters "*Q*" (after *A* or *B* has uttered "*P*") and then *B* asks *A* something with the significance of "Why (*Q*)?," *A* might go on to reply "*P*," thereby bringing it into the open that he or she endorses "*P*" as a reason for "*Q*" (rather than treating the two as expressing independent commitments). Although asking for reasons would involve constructions having the significance of "why," such devices need not be conceived of on the model of expressing, in the content of claims, pre-existent inferential relations.

This proposal might point in the right direction. And Brandom can admit this without giving up the layer-cake picture. He just needs to reconsider his treatment of queries as auxiliary speech acts that facilitate scorekeeping-communicative practices but are dispensable in principle.

However, the problem of making manifest that one treats some utterances (commitments) as incompatible might compel us to look after additional resources. Recall that the minimal discursive practice involves challenges performing the role of demands for justification of claims, realized by affirming sentences treated as making incompatible claims. This proved problematic, for the reasons spelled out before. On the other hand, reason-seeking questions, though fit to discharge the role of requesting reasons, do not by themselves capture an element of conflict present in the original conception of challenge. As Brandom puts it:

> Tracing the provenance of the entitlement of a claim through chains of justification and communication is appropriate only where an actual conflict

[96] Millson (2014) argues that Brandom's conception of challenges as claims with incompatible contents is incoherent. He suggests that reason-seeking questions (why- or how-questions) should be added to the arsenal of prelogical creatures. Kukla and Lance (2009) also stress the basic role of interrogative practices, as well as what they call recognitives, vocatives, etc. In a somewhat similar spirit, Wanderer (2010) argues that challenges should be thought of as second-personal, addressed speech acts. Belnap's (1990) critique of the "declarative fallacy" is an important source of influence here.

> has arisen, where two *prima facie* entitlements conflict. (Brandom, 1994, p. 178)

To raise a query is not yet to disclose anything about what one takes to be incompatible with what. It suggests itself to say that our prelogical ancestors would have been better off if they could explicitly reject (or disavow) commitments in acts of *denial* as well as explicitly accept (or reaffirm) them in acts of *assertion*. Suppose *A* makes a claim that *p*. Then *B* could openly reject it (signaling its incompatibility with some commitment of hers) by uttering something with the pragmatic significance of "No" (with a conventional gesture possibly accompanying it). If, in addition, *A* and *B* could address each other with queries, we can appreciate the point and benefit of communicative exchanges of the following type (given that challenges, too, are always potentially at issue):

> *A*: "Food (over there)." (pointing to his/her cave)
>
> *B*: "No." (shaking his/her head)
>
> *A*: "Why (no)?" (or, perhaps, "How (so)?")
>
> *B*: "Eaten." (pointing to his/her belly)

The idea that denial might be considered a basic speech act on all fours with assertion has been elaborated in a number of recent approaches that reject the view that a denial of *p* is to be explained in terms of conceptually prior notions of negation and assertion: that is, as an assertion of not-*p*.[97] Rather, negation is to be explained in terms of the speech act of denial. Particularly intriguing is Price's proposal: a device with the pragmatic significance of denial is needed for dialectical reasons. It provides a "perfectly general means of registering and pointing out the incompatibility" (Price 1990, 224).

This, I submit, applies to Price's example of an exchange in which *A* does not register the incompatibility that *B* aims to convey and exploit in challenging *A*'s claim. The example shows that discursive creatures could greatly benefit from elaborating a device that unambiguously indicates to communicating parties that "an incompatible

---

[97] Cf. Price (1983), Price (1990), Smiley (1996), Rumfitt (2000), Ripley (2011).

claim was being made" (Price 1990, 224). According to Price, negation-based denial will do. However, discursive moves of denying can be performed by means of a device having the significance of "No" with respect to declarative utterances not containing a negation operator. In this sense, the speech act of denial could be a basic dialectical device for making the incompatibility of commitments manifest. It could thus subserve the practice of making dialectical challenges to attributed commitments by conventionally marking "points of conflict or disagreement" (possibly followed by a specification of the source of incompatibility). It is not that far-fetched to speculate that a rudimentary denial could have paved the way for a subsequent elaboration of the sign of negation functioning as a sentential (truth-functional) operator.[98]

I sympathize with this proposal. Again, however, I read it as the grist on my mill. In my view, denying (rejecting) a claim is akin to the use of devices expressing broadly inferential relations. Identifying what sentences speakers assent to (endorse) and dissent from (reject) is required for assessing them in terms of incompatibility relations. And denial serves to coordinate sense-making activities in this direction. I do not mean to imply that Price himself would endorse my diagnosis. He assumes some sense of material incompatibilities on the part of speakers and explains the sign of denial as a means of making interpersonal disagreements sufficiently manifest. He offers an account of how rational creatures could have developed such a sense. First, by having to make practical choices between performing and not performing a certain course of action they could have acquired a basic awareness of mutually excluding options. Furthermore, they could have started to appreciate that a communicative signal (e.g., "Berry—over there") is appropriate in the presence of a certain condition (if there are berries in the direction of pointing) and inappropriate in its absence (if

[98] In addition, a dialectical toolkit consisting of denial and reason-seeking questions would seem to be vital for making manifest one's rejection of inferences. Plus, the notion of denial provides a rather straightforward way of capturing what it is for one to take an inference from "*P*" to "*Q*" to be correct: namely, to take it that one should not claim "*P*" while denying "*Q*." This matters, because inferentialists maintain that a propriety of inferring "*Q*" from "*P*" does not mean that one *ought to* claim "*Q*" after one has claimed "*P*." Rather, it means that one *ought not* to claim "*P*" while making "*Q*" incompatible claims.

there are no berries in the direction of pointing). Price's account is interesting in its own right.

That said, inferentialists are committed to explaining how the rational space of incompatibilities and inferential relations can be socially (intersubjectively) instituted and navigated in the first place. Then my point can be reformulated as follows: even if we grant that agents have their private tastes of incompatibilities, they still need to express, coordinate and calibrate them in the public arena via suitable pragmatic devices that ensure. My challenge is that it is difficult to see how they could manage this without elaborating some dialectical device with the significance of denial, which brings into play an element of semantic self-consciousness.

## 6. Semantic Self-Consciousness Reconsidered

One might retort that, for all that has been said, the prelogical practice *might* come to contain utterances treated as inferentially related, owing to which (material) inferential links they acquire propositional contents. In principle, inferentialists can persist in holding that logical-expressive devices presuppose and explicitate implicit content-conferring relations.

Fair enough. I have not excluded this *possibility*. But by reconstructing the predicament of our "Brandomian" ancestors equipped with the abilities and devices supposedly sufficient for the elaboration of *PGAR*, I have argued that they would have a problem of making sense of one another in terms of inferential relations. Some ascent to the level of semantic self-consciousness would seem to be more than vital. This, though, leaves open the possibility that our prelogical critters could have made significant progress by first elaborating rudimentary dialectical devices, such as inference markers or denial, together with declarative (likely also interrogative) utterances composed of nonlogical expressions. Logical operators could then have been latecomers enabling increasingly controlled (self-conscious) inferential practice, thus making the space of reasons ever more articulated and shared.[99] On this picture, semantic self-consciousness is not an all-or-nothing matter. It comes in grades.

[99] E.g., making explicit multi-premise and multi-conclusion inferential relations.

This picture provides a different view of what logic *is* by offering a different story of *why* and *for what* purposes it could have been elaborated. This is in the pragmatist spirit of the inferentialist enterprise. But the conclusion reached challenges some of its core ingredients. For note that by enriching the prelogical practice with dialectical devices we have come quite close to making it a rudimentary logical practice—at least in the sense of introducing an element of (weaker) semantic self-consciousness.

Should the *expressive* conception of logic be given up? Not really. *ERL* is just one way of elaborating what it might take for logic to be expressive. If we include in logic also dialectical expressions (on account of their expressive role), the expressive role can be redefined. On this view, logic does not merely recapitulate pre-existing inferential relations in a perspicuous idiom. By helping to establish norm-governed *PGAR*, it both shapes the very space of reasons and makes it increasingly articulate.

This, I submit, is consistent with it being the case that prelogical discursive practices involve rudimentary intentionality. Hence, it does not follow that logic forges completely new links between utterances and expressions where there have been none before, conferring contents upon them from scratch. What elaboration of logical devices makes possible is individuation of full-fledged propositional contents relative to a space of reasons. Once the space is established, we can isolate a material fragment of a language and interpret its sentences (utterances) as expressing finely articulated propositional contents. Indeed, we can give material inferences (incompatibilities) their due: that logic has this kind of role by no means implies that all genuine inferential relations must be formal. At the same time, we should be wary to project those emergent features of our developed practice into the ancestral prelogical practice.

## 7. Conclusion

In this chapter I have scrutinized one view of the nature and structure of our practices of making moves in a space of reasons painted by prominent inferentialists. On this so-called layer-cake picture, the ground-level conceptual layer (practice), modeled by Brandom's idealized "Sprachspiel," is prelogical and self-standing. The logical layer presupposes it and serves to make explicit a preexistent space of assertional and inferential proprieties implicitly structuring the basic layer, relative to which the

meanings of prelogical expressions are constituted. I considered McDowell's critique of this picture and found it inconclusive. Then, revisiting the issue from a genealogical perspective, I argued that imaginary ancestral speakers - whose repertoire is initially restricted only to moves in Brandom's "Sprachspiel" - will likely need to elaborate expressive (proto-logical) devices to identify and treat utterances of one another as moves in a space of reasons with a particular significance (content). So I proposed that their role will be both expressive (of their attitudes) and constitutive (of inferential relations). This suggests a *via media* between Brandom and McDowell, which invites us to rethink also the role of logic, broadly conceived, as serving both expressive and coordinative functions.

# Part II
## *The Nature of Reasoning*

# Chapter 3

## *Reasoning: An Interactionist Approach*

### 1. Introduction

Traditionally, man has been considered a rational animal in part because man has a unique capacity for reasoning. But what kind of capacity is this thing called *reason*? One can distinguish individualist and interactionist accounts. According to the former, to reason is to engage in a conscious thinking activity purporting to work out reasons for or against accepting or doing something. Its development and cultivation may be socially mediated. But human reason is primarily a capacity tailor-made to secure individual thinkers and agents more or better knowledge and decisions. By contrast, according to the latter accounts, reasoning is originally at home in communicative exchanges in which interlocutors make, assess, challenge, defend, modify or retract claims. It involves public performances of the production and assessment of reasons. Secondarily, it is co-opted for individual purposes, including for ratiocination *in foro interno*.

The inferentialist approach discussed previously offers a philosophical account of the latter sort, characterizing reasoning competence in terms of practical abilities to play the social game of giving and asking for reasons. In the next chapter I will argue

that it contains insights allowing us to come to terms with topical issues concerning the nature of reasoning. Yet it leaves something to be desired from a naturalistic point of view. In the following I focus my attention on congenial scientific approaches that have mapped the terrain left unexplored by inferentialists.

Arguably the best developed interactionist approach to reasoning currently on offer is due to Hugo Mercier and Dan Sperber.[100] As they characterize it, reason is a uniquely human capacity to produce or assess reasons for or against something. We exercise it whenever we argue or justify something or when we evaluate others' arguments or justifications. At the proximate level, it recruits a cognitive ability to *metarepresent reasons* for or against something. There may be an *intuitive module* specialized at inferring such metarepresentations. At the ultimate level, they suggest that reason evolved, via the standard process of natural selection, primarily to serve interpersonal argumentation and justification – practices which could have proved adaptive in hypersocial niches of our ancestors increasingly depending on coordination, cooperation and communication. M&S also oppose the traditional, "intellectualist" view that its *raison d'être* is to improve individual cognition or decisions. They do not deny that we make use of reason in individual ratiocination or decision-making. But these are derivative uses. Indeed, drawing on considerable empirical evidence, M&S argue that reason performs rather sub-optimally when put to its individual uses, whereas it performs comparatively well in its social uses. In all, this evidence seems to favor the view that reason is primarily a tool for interaction.

M&S's interactionist account of reasoning has already received a lot of praise as well as constructive criticism. Myself, I am in sympathy with their big picture: human reason is primarily a social competence to justify or argue one's views, choices or actions. M&S often adduce impressive empirical evidence for their intriguing claims. But I find other claims of M&S less convincing. In this chapter I am going to say why.

---

[100] See Mercier and Sperber (2009), (2011), (2012), (2017). Hereafter I shall refer to their works as follows: M&S (YEAR, p.).

I first reconstruct the main tenets of M&S's interactionist approach. Then I critically probe two of their distinctive hypotheses: i.e., the claim that reason is an adaptation designed specifically by natural selection and the claim that it has a modular basis. But this is not my main concern. What I find more problematic, from a philosophical perspective, is their metarepresentational account of reasoning. I first argue that, taken at face value, their characterization of reasoning as involving metarepresentations of reasons is vulnerable to two objections familiar from ongoing philosophical debates. It threatens to oversophisticate reasoning and invites the specter of vicious regress. Then I consider another strand in M&S's account, according to which reasoning (typically) involves intuitive reconstruction of reasons for something that we already accept or are tempted to accept or want others to accept. I point out that even if this particular account of reasoning avoids the specter of vicious regress, it still faces the oversophistication objection. Even more importantly, M&S owe us a coherent account of the cognitive role of reasons: in particular, what it could mean to say – as they do – that one can be "convinced by reasons" to accept something. In general, then, I am concerned that this kind of approach fails to do justice to the role that person-level consideration and evaluation of reasons, properly understood, plays in making up and revising our minds. This discussion prepares the ground for the next chapter, where I shall argue that the philosophical approach in terms of the practical skills of giving, taking, and asking for reasons suggests a way to avoid some of those problems.

## 2. Inference, Intuition and Reasoning

To get a grip on M&S's approach, we should first understand how they use three key notions: *cognition*, *inference* and *reasoning*..[101] *Cognitive processes*, as M&S define them, deploy *inferences* to go beyond (or otherwise update) available information (e.g., perceived or stored in memory).[4] Inferences require information-carriers of sorts – representations – serving as their inputs and outputs, respectively. Depending on the kind of process, representations consumed or produced by inferences specific to it may be conceptual (e.g. beliefs) or non-conceptual (e.g., percepts). Also, cognitive processes differ in the extent to which their inputs, inferences and outputs are

[101] Cf. M&S (2017, pp. 53, 55-56). Cf. M&S (2009, p. 153), M&S (2017, p. 82).

conscious (if at all). Some low-level processes may be unconscious all the way up and down. Transforming subliminal information into automatic adjustments of ongoing movement may be of this sort. More deliberate and controlled thought processes occupy the other end of this continuum. And perceptual processes are somewhere in between. They yield conscious outputs (percepts) but the rest remains unconscious.

Of particular interest are so-called *intuitive inferences*. We are consciously aware of their outputs but not of the processes producing them. However, what qualifies their outputs as *intuitions* is the fact that they pop up into our conscious awareness under a specific *metacognitive* mode of presentation. We feel them to be right, with a positive degree of confidence. But neither our confidence nor our acceptance of them is backed up by conscious reasons. For instance, when I instantly recognize that my friend is sad, this may be an intuitive upshot of a subpersonal processing of some data or cues (e.g., about his facial expression); but I certainly do not need to consciously represent those data as the reasons or evidence to think so.

On the one hand, M&S submit that a large part of our cognition and decision-making recruits such unreflective processes, whose outputs (intuitive judgments or decisions) we consciously accept (with some metacognitive confidence) but not for conscious reasons. On the other hand, though our thoughts and acts are underpinned by such processes, we have the cognitive wherewithal to reflect on them. In particular, we can attend to or consider reasons for or against something we accept, are tempted to accept or merely entertain. Now, reasoning is officially characterized by M&S in the following way:

> When we reason, conclusions do not just pop up in our mind as self-evident; we arrive at them by considering reasons to accept them. (M&S, 2017, p. 52)

As M&S explicate this, when one arrives at a conclusion *Q* by considering some supporting reason *P*, one ends up with a reflective (reasoned) conclusion.[102] M&S distinguish four basic cases in which this capacity – which they basically equate with *reason* - is exercised. First, reasons can be considered *prospectively* "as arguments in favor of new decisions or new beliefs" (M&S, 2017, p. 128). This may

[102] M&S (2017, p. 150).

be either an individual process (*inquisitive reasoning*) or a social process whose goal is to convince others of something that one already accepts (*argumentation*). M&S reserve the term "reasoning (proper)" only for these cases, which they further distinguish from justification (and explanation), where reasons are considered *retrospectively* "to explain or to justify decisions already taken and beliefs already held" (Ibid., p. 128).

Inferences are ubiquitous in the animal realm. But M&S think that there is no evidence that non-human animals are capable of conceiving of something as apt to be accepted (rejected, retracted, revised) for conscious reasons. That seems right. Reason, at least as M&S understand it, appears to be a human-unique feat. M&S address two questions concerning this. First, what reason is for – i.e., the proper function(s) it is designed to fulfill. Second, what kind of cognitive abilities reason, thus construed, plausibly involves; and what kind of cognitive mechanisms underlie them. I shall honor this order in what follows, addressing the first issue in Section 3 and the second issue in Section 4.

## 3. What is Reasoning (Good) For?

For the sake of dramatic impact, let us first consider what M&S call the "classical" view of human reason.[103] On this view, reasoning is first and foremost an individual thinking process that enables us to infer better beliefs and decisions based on considering or weighing evidence *pro* and *contra*. Its *raison d'être* is to enhance the reliability and coherence of our beliefs and decisions. Reason enables us to comprehend causal, evidential and logical relations, estimate consequences of events or actions and, based on that, select an action or action-plan according to whether it best promotes our short- or long-term goals and so is worth adopting or executing. As such, it has been contrasted with instincts, reflexes, stimuli-controlled perceptions, habits, and passions or intuitive seemings, its purpose being in part to supervise, pre-empt, override or correct inflexible, short-sighted and often biased responses produced by such unreflective processes.

[103] Cf. M&S (2017, p. 144).

M&S think that the classical view seriously underestimates the role that unreflective processes play in our cognitive and practical economy.[104] It regards them as troublemakers to be supervised and disciplined by reflective thinking. Yet, advances in cognitive psychology and neuroscience suggest to us a different view of the matter. On that view, we are blessed to have neurocognitive circuits carrying out unreflective processes, including affective and intuitive processes. They underlie all sorts of skillful coping with the physical and social world surrounding us, upon which our survival, reproduction and thriving are predicated.[105] In fact, conscious awareness is just the tip of a much larger iceberg, most of which consists of such processes. They are often based on evolved learning regimes and are exquisitely fine-tuned to cope with rather narrow domains of tasks. Like our perceptual process, they work reliably within their confines, yet might misfire when the conditions are somehow abnormal.

Relatedly, the classical view imputes to reason much more power than is its due.[106] If the purpose of reasoning is to enhance individual cognition and decision-making across the board, one would expect it to perform that function reliably enough. Yet, there is mounting evidence that people's performance in experimental tasks designed to test individual reasoning competence is ill-calibrated vis-à-vis the cherished canons of good reasoning (logical, statistical, decision-theoretic). To drive the point home, subjects' judgments regarding the validity of arguments (of the same form) are liable to be affected by how believable they take the premises to be (*belief-based reasoning*) or by how believable they take the conclusions to be (*belief-bias*). Or, for that matter, people tend to seek concordant evidence in support of something they find believable and neglect or suppress discordant evidence (*myside bias*). People are also more likely to arrive at the conclusions that they wish to arrive at (*motivated reasoning*), tend to persist in holding their beliefs despite being presented with discordant evidence (*belief perseverance*), and tend to make choices they find easier to justify (*reason-based choice*).

---

[104] See especially M&S (2017, chapters 3-6).

[105] Frith (2013) provides a good review. Damasio (1994), among others, has done much to popularize this idea.

[106] For a review see M&S (2017, chapters 1-2, 11, 13) and also M&S (2011).

By M&S's lights, the classical view fails to offer a plausible account of these phenomena. Rather, they call it into question.[107] First, there is solid evidence that our unreflective cognitive processes tend to be reliable means of achieving our individual cognitive or practical goals. So when the beliefs and choices produced by them are correct or good, reasoning has nothing to improve on. Second, as a means of achieving our individual goals, reasoning is not all that reliable. And when beliefs or decisions produced by unreflective processes are incorrect, reasoning often tends to advocate what we already find believable, rather than to check and correct them by taking into account evidence *pro* and *contra*. Yet, if its supposed *raison d'être* is to reliably update our beliefs about the world, or to make sound decisions in it, we would expect it to be more impartial: i.e., sensitive not just to supporting, but also to discordant, evidence.

M&S conclude that reason is unlikely to be fine-tuned to support individual cognition and decision-making. All the more so if we assume, as M&S do, that it is a faculty of mind that has evolved. From this perspective, its estimated benefits are unlikely to have offset its costs: flaws, biases and the energetic needs of large brains required to implement it. After all, reflectively double-checking the reliability of one's unreflective inferences or their coherence with other beliefs or desires is a cognitively demanding feat, vulnerable to biases and lapses of its own.

M&S's alternative hypothesis is that reasoning evolved as a specialized interactive device.[108] They speculate that reasoning could have evolved to serve the function of producing and evaluating reasons in order to *justify* one's claims, views or actions in the public space and thereby also justify oneself as a reasonable fellow. That was likely a significant boost to mutual interpretability and predictability - what to expect of one another - hence to coordination, joint action and cooperation. Such a functional trait likely had adaptive effects for humans inhabiting hypersocial niches. Thanks to the development of social-communicative skills of explaining or justifying themselves in terms of verbalized reasons, ancestral humans were able to coordinate their interaction and cooperation more efficiently. This included committing effects

[107] See especially M&S (2017, introduction, conclusion). A good review from a different perspective is Evans (2010).

[108] M&S (2017, chapter 10).

(what others can expect from an agent and what she expects of them in turn), reputation-building effects (establishing, defending or rehabilitating one's social profile and standing as a good cooperator or communicator), and keeping track of such effects, including indirectly via gossip.[109]

M&S also think that reasoning could have served another adaptive function: producing reasons as *arguments* aimed to persuade peers to adopt one's beliefs, decisions, plans, etc.; and to assess the quality of others' arguments so as to be convinced by those that support beliefs and decisions likely to be good. This might have helped to solve an adaptive problem pertaining to the practice of verbal communication.

Communication makes it possible to obtain cheaply a valuable commodity – information. Being dependent on coordination and cooperation, we may assume that our ancestors had often been incentivized to share information. But this was not always the rule. People likely had divisive interests concerning scarce resources and temptation to cheat on others when they could reap the benefits of cooperation without incurring the costs. So sometimes they would have been tempted to pass on a dishonest or manipulative message.[110] In such situations consumers of messages had better not naively buy *whatever* message *whoever* tries to sell in the market place, or they would risk ending up with a non-adaptive ratio between valuable information and misinformation. Yet they should not be overly suspicious, or they would easily end up with a lesser amount of adaptive information. Rather, it pays to be *epistemically vigilant*[111], flexibly calibrating one's trust according to whether the source is trustworthy or the message coherent with what the consumer knows or believes (or with other things that the producer is known or supposed to have said). If a producer of a message wishes to raise the chances that her message gets accepted, she must accordingly develop ways of convincing others, who might be vigilant, to buy it.

---

[109] Cf. M&S (2017, pp. 185–186).

[110] This threat was amplified when non-iconic, arbitrary signals became the main currency of communication, as these do not wear the signs of their own reliability on their sleeves.

[111] See also Sperber (2001) and Sperber et al. (2010).

Here, M&S submit, the argumentative function of reasoning proved valuable. If others resist, or if one expects their resistance, one might seek compelling reasons, which, if found acceptable by consumers, could make them accept the message. It then stands to reason that one should try to come up with considerations that are acceptable to others and, at the same time, support one's intended message (claim, proposal). Symmetrically, receivers have their own tools to assist them in assessing the goodness of reasons, including sensitivity to alternatives and conflicting evidence that enable them to probe reasons offered.

Initially, the function of interactive reasoning was not to secure reasoners better beliefs or decisions. At least, this holds for its productive uses. Thus, justificatory uses were designed to socially rationalize one's already adopted doxastic or practical commitments (typically intuitive). And argumentative uses served to raise the social acceptability of a message that its producer typically already endorsed (again, intuitively). On the other hand, the consumers were more vigilant and demanding, being sensitive to the coherence of the communicated message with other data, including discording evidence. Eventually, the two strategies – i.e., consumers' interest in getting good information and the producers' interest in making their message accepted – might have converged into a virtuous equilibrium that brought about mutually adaptive dividends. To be able to sell their messages at the marketplace, the producers needed to adjust their strategies in expectation of vigilant evaluation on the part of real or potential consumers (including their past track record as reliable/honest or otherwise). And it might often be the best strategy to be honest and try to provide coherent reasons or evidence that also turns out to be reliable.[112] This could also explain the formation and stabilization of social norms governing such practices, including honesty, truth or norms of coherence.

Reverse-engineering the adaptive function(s) of a trait is a highly speculative discipline. But M&S present their theory as accommodating much available evidence about the features of reasoning and its performance in various contexts and experimental conditions.

[112] Cf. M&S (2017, pp. 263-264).

Inter alia, research in psychology has amply documented that we excel at rationalizing our beliefs or actions, though this often involves a considerable dose of confabulation aimed to meet social-normative expectations. The theory further predicts better reasoning with others or in groups whose members share some common ground and goal while holding different views on the issue at hand, due to open discussion and exchange of reasons.[113] Indeed, it was observed that groups fare better in Wason's selection task (compared to solitary reasoners). The design is such that the experimenter shows you, say, the following four cards (sides up) - |A| |D| |3| |7| - telling you that each card has a capital letter on one side and a single-digit number on the other side. Then you are asked: Which cards should you turn over to test whether the following is true or false: *If the card has an A on one side, then it has a 3 on the other side?* Solitary reasoners usually fail (sometimes up to 90 %), tending to turn over |A| and |3| (|3| is irrelevant to test the conditional) rather than to turn over, correctly, |A| and |7|. In marked contrast, when allowed to have a discussion and to argue proposed solutions, groups usually end up with the right solution.[114]

On top of that, M&S argue that some notorious biases can be viewed as *design features* of reasoning if it is fine-tuned for social interaction.[115] In particular, it should not surprise us that myside bias affects the producers of reasons who aim to justify their beliefs or actions or to convince others to accept or adopt them. After all, it would not sell one's messages to point out evidence that does not favor them. But it also can be expected to engender suboptimal results in the context of solitary ratiocination (the risk of sticking to incorrect beliefs or suboptimal decisions, even reinforcing one's confidence in them).[116] However, interpersonal reasoning often involves an efficient

[113] Wason (1967). The effect of *group polarization* is explicable, too: ideologically homogenous groups tend to end up even more homogenous, absent discussion of alternative views and reasons in their support.

[114] Moshman and Geil (1998).

[115] Cf. M&S (2017, p. 219).

[116] Cf. M&S (2017, pp. 263-264). In a similar vein, it can be argued that yet other robust phenomena such as motivated reasoning, belief perseverance or reason-based choice can be accounted for as predictable aspects of or influences on reasoning. But it is especially the predictions concerning

division of epistemic labor: somewhat lazy producers of reasons tend to support their (intuitive) commitments with *prima facie* conforming reasons, leaving it to more demanding and objective consumers to probe them, eventually adjusting their own argumentative strategy. Admittedly, consumers might themselves be biased toward disconfirmation. But even then they can be expected to be non-dogmatic enough to listen to and eventually accept compelling justifications or arguments. At the end of the day, both the producers and consumers can be expected to be better off in that they end up with better beliefs and decisions (compared to their performance when reasoning on their own).

## 4. Intuitive, Metarepresentational Inferences About Reasons

So far I have focused on how M&S address the question *Why do we reason?* Their answer is that reasoning is primarily a tool designed for social justification and argumentation. They also address the question *How do we reason*?, focusing on the cognitive mechanisms and architecture of reasoning suitable to implement its function.

Recall that M&S draw a distinction between intuitive inferences and reasoning. Only the latter involves reflection in that one is (or becomes) aware of the source of his inference and takes it as a *reason* for the *conclusion*. Yet, they take the two to be intimately linked. For reasoning is said to consist in a use of intuitive inferences of a special kind: inferences about reason-conclusion relations. Let me expand on this a bit.[117]

It is tempting to think that reasoning and intuition represent two separate layers or systems of thinking housed in human minds. Both can fix or update our beliefs, knowledge or decisions. But they achieve this effect via intuitive and reflective thinking, respectively. Of the two, reasoning is a more careful and far-sighted mental capacity, owing to which we humans can better see what is likely to be true or what action or action-plan best promotes our short-term or long-term goals and so is worth adopting. Its *raison d'être* is to supervise, pre-empt or override intuitive responses that

consumers and the division of epistemic labor that are deemed genuine predictions original to the theory. And they have started to be tested and confirmed by empirical research (not least by their own).

[117] See in particular M&S (2017, chapter 6).

may be too rigid, short-sighted or biased. More sober versions of this view have been advanced by *dual-process accounts* of cognition elaborating the distinction between intuitive *Type 1* processes (which tend to be fast, spontaneous, automatic, computationally undemanding) and reflective *Type 2* processes (which tend to be slow, effortful, controlled, working memory taxing).[118] On this view, intuitions are often our default responses that tend to be reliable in their narrow domains of competence. But sometimes they fire and misfire when the task or problem at hand does not fall within their narrow domain of competence. Here, then, it pays to think in a slower, more self-conscious and deliberate manner that is more sensitive to evidence, possibly taking into account normative principles of reasonable inference (though note that reflection is often a somewhat lazy controller following the law of the least cognitive effort and is vulnerable to biases of its own).

On this picture, the relation between reasoning and intuitive inferences is that the former gives us some higher-level metacognitive control over the latter and their outputs. So we can (re)assess (eventually revise) our intuitive beliefs or decisions in light of reasons for or against: e.g., when they collide with other intuitive or reflective conclusions, when we encounter conflicting evidence, when our confidence is not strong enough, or when we are challenged by others who do not share our intuitions.

M&S, however, think that the relation between reasoning and intuition is more intimate. According to them, reasoning actually requires intuitive inferences of its own: inferences producing intuitions about reasons to accept something as worth believing:

> […] reasoning is not an alternative to intuitive inference; reasoning is a use of intuitive inferences about reasons. What makes humans capable of inferring their reasons is, we claim, their capacity for metarepresentational intuitive inference. (M&S, 2017, p. 133)

*Metarepresentational* aspect of such inferences consists in the fact that they produce representations of specific relations between representations – namely *reason-conclusion relations*. Metarepresentation is a species of *metacognition*. First-order

[118] Cf. Sloman (1994), Evans and Over (1996), Kahneman (2003), (2011), Stanovich (2004), Evans (2010). See also the papers included in Evans and Frankish (2009).

representations about the world out there can be metacognized in the guise of a feeling of confidence that accompanies their appearance in one's conscious awareness. At a higher cognitive level, then, this confidence might be supplanted by a higher-order representation of a lower-order representation as possessing a certain epistemic quality, such as clarity, plausibility, and the like. Once the metarepresented quality concerns specifically rational-evidential relations - such as coherence or incoherence - between lower-order representations, we have entered the domain of reason.[119]

Presumably, however, representations of reason-conclusion relations are not given. They need to be inferred themselves from some data. Now it is possible in principle that the representation of *P* as a reason for *Q* is itself a reflective conclusion of some higher-order reflective inference, which involves some other reason to accept it. No doubt, this sometimes happens. But we normally do not consider reasons for reasons (etc.) beyond two or three rounds of reflective iteration. Anyway, at some point reflection about reasons for reasons clearly comes to a halt, or reasoning would never get off the ground. And in such cases we end up with an intuitive conclusion that something is a reason for something reached through an inferential process that is both opaque to us and does not involve any further considerations of reasons. However, reasoning differs from intuitive inferences about particular domains of facts in that it operates at a higher level. Its task is to figure out whether representations - typically outputs of first-order intuitive inferences - are (can be) backed up by reasons.

Suppose we agree that reasoning is a use of intuitive inferences about reasons. What kind of cognitive mechanisms does it take to produce intuitive inferences in general and metarepresentational inferences in particular? M&S have no time for the idea that there is a central inference engine functioning as an all-purpose problem-solver based on domain-general processing, integration and evaluation of information. Nor do they deem it plausible to assume that there is set of central, domain-general mechanisms, complemented by peripheral, domain-specific mechanisms underlying sensory perception, motor control or the processing/production of linguistic inputs.[120] In M&S's view, minds *massively* consist of specialized and selective information

[119] See in particular M&S (2017, chapter 6).

[120] As Fodor (1983) famously proposed.

consumers and producers – called *modules* – deploying dedicated inferential procedures designed to carry out specific tasks by mapping specific input information into specific output representations bearing on those tasks. M&S regard this architectural hypothesis - *massive modularity* – as eminently plausible and well suited to reveal how reasoning works and fits into the rest of our largely intuitive cognition.[121]

To cut a long story short, intuitions are outputs of dedicated modules that operate (semi-)autonomously and have a distinct phylogenetic or ontogenetic history. M&S suggest that there might be modular mechanisms producing intuitions pertaining to various domains comprising what they call *folk ontology*[122]: faces, objects (permanence, identity, solidity, causal powers), animacy, agency, biological kinds, psychological states, cheaters, and much more besides. These might operate in parallel and largely beyond our conscious radar. They might process or recycle information, provided it satisfies their in-built "trigger" criteria, while competing for limited attentional and computational resources based on the expected relevance of their outputs. They deploy computational shortcuts to rapidly and cheaply deliver outputs needed to cope with their characteristic tasks in time. As one might put it, they are both *fast-and-frugal* and *reliable* in their narrow domains of competence. But they are liable to misfire when conditions are abnormal or unfavorable. M&S also presume that specific selective regimes favored brains composed of semi-autonomous modular mechanisms supporting such specialized competences. They were selected for exploiting dependable statistical regularities that stably obtained in environments of evolutionary adaptedness and contained information relevant to specific challenges or opportunities that it was adaptive for our ancestors to cope with in order to survive and have offspring. Some may be outright genetically prespecified. Most, however, are based on prespecified learning programs that channel their reliable acquisition across ontogeny, being differentially sensitive to a range of information (including from social sources) to set their prespecified parameters. One way or another, such

[121] See in particular M&S (2017, chapters 4, 5). See also Tooby and Cosmides (1997), Sperber (1996), (2000), (2005), Carruthers (2006), Barrett (2015).

[122] Or one might say that for outputs of such modules to be intuitions, they have to be metacognized. And in so far as metacognitive effects may themselves be produced by a module (or modules) of their own, intuitions might be construed as products of a modular interaction.

competences are conceived as psychological adaptations shaped by gene-based natural selection.

In general, modules need not represent regularities to take advantage of them in a fast-and-frugal execution of their tasks. For organisms like us, who have color vision and whose diet might be enriched with ripe plums, there is a dependable regularity between the color of plums (purple) and their ripeness, hence edibility. Because it obtains, the fact that the plums over there are purple makes it likely that they are edible. This gives us a potential reason to believe that the plums are edible. No doubt, as mature thinkers we can appreciate this much in our reflective moments. We might reason our way to the belief by subsuming the particular premise (the plums are purple) under the general premise (purple plums tend to be edible) and extracting the particular conclusion (the plums are likely edible). But this is an exception, not the rule, since intuitive inferences effectively take advantage of such regularities without any need to incorporate them (unconsciously) as a sort of general premise or, for that matter, without representing the reasons reflecting them.

Once we admit that reasoning is a use of metarepresentational intuitive inferences, and that intuitive inferences in general tend to be produced by dedicated information-processing modules, reasoning is likely to have a modular basis, too. Or so M&S submit, calling the hypothesized basis a "reason module." It is a domain-specific mechanism making use of intuitive inferences specifically about reasons that are exploited in prospective or retrospective uses.[123] To this end, it exploits dependable regularities concerning conceptual representations as such (typically verbally expressed), rather than represented states of affairs. It specifically attends to those aspects that bear on appreciating some of them as supporting (being coherent or incoherent with) others. Still, domain-specificity of the reason module is compatible with what M&S call the *virtual domain-generality of reason*. For the representations that are represented as reasons and conclusions, respectively (*P* and *Q*), can be about any domain of facts. So by accepting *Q* in light of *P*, we still indirectly get the benefit

[123] As I shall explain shortly, M&S think that justificatory and argumentative uses of reasons – as well as their evaluation on the part of recipients – demarcate the two main or proper functions of reasoning.

of reasoning about virtually everything and anything. Due to this feature, reasoning is both modular and at the same it mimics a domain-general inferential engine.[124]

## 5. First Assessment: is Reason a Biological-Modular Adaptation?

I said that I find human reason(ing) appealing – up to a point at least.[125] What I find less convincing is M&S's claim that its evolution was channeled specifically via *genetic* routes. An alternative hypothesis concedes that interactive reasoning evolved in response to social pressures (including those specified by M&S), but via cumulative *cultural* routes, being ontogenetically fine-tuned via social interactions and learning.[126] In my view, the evidence adduced by M&S does little to favor their hypothesis over this alternative. I also worry that M&S's claim that our minds are massively modular fails to carry conviction in part because reasoning, in particular, does not seem to operate like a module.[127] This is what I shall argue in this section. In the next section, then, I critically asses the metarepresentational account of reasoning.

### *5.1 A Reason Module?*

M&S link their modular account of reasoning to a *massively modular architecture* of mind. However, to propose that reflective reasoning is modular is quite a controversial thesis, as they are well aware of. How can it be modular, given that we can apparently reason about anything and everything? Philosophers have stressed its flexible *modus operandi* allowing conceptual integration, evaluation of information from various sources and, based on this, figuring out solutions to often novel problems. It often decontextualizes, abstracts, analogizes or generalizes. Psychologists have long theorized it as an information-integrating central process responsible for conscious belief fixation, problem-solving or practical decision-making, closely related to the

[124] M&S (2017, p. 104, 330).

[125] See the peer commentaries on M&S's target article (2011) in *Behavioral and Brain Sciences* 2011, 32(2). See also the peer commentaries on M&S (2017) by Sterelny (2018), Dutilh Novaes (2018), Chater and Oaksford (2018).

[126] For a congenial approach to other socio-cognitive capacities of humans, see the conception of "cognitive gadgets" developed in Heyes (2018). See also Dutilh Novaes (2018).

[127] The basic problem is the apparent cross-domain promiscuity and context-sensitivity of reasoning that is information-hungry and sensitive to information of *any* kind (about any domain).

family of controlling, domain-general processes jointly called executive functions. *Prima facie*, reasoning appears to be singularly resistant to incorporation into a massively modular architecture, hence posing a challenge to it.

One line of M&S's reasoning invokes general considerations allegedly favoring massive modularity. Unlike putative all-purpose inferential engines, specialized modules do not face the problem of computational explosion (intractability), and they are also eminently evolvable.[128] If so, then reason, too, is likely to have a modular basis. Or so one may argue. Such reasoning is not beyond the pale, and it has been repeatedly challenged.[129] So I shall put it aside as inconclusive at best.

Another strand in M&S's reasoning, however, uses considerations specific to reasoning. M&S aim to accommodate the apparent domain-generality of reason whilst sticking to the claim that it modularly attends to specific inputs - representations and their aspects - and processes them into reasons utilized in justifications or arguments. Its *direct* task, recall, is to infer higher-order intuitions about (the strength of) reasons for lower-order conclusions. Still, as conclusions can be virtually about anything, reasoning is said to *indirectly* yield the effect and benefit of reasoning *virtually* about everything.

My focus will be on this second line of M&S's reasoning. I do not find it a compelling argument for the domain-specificity of reasoning for the following reasons.

Like many massive modularists, M&S help themselves to the assumption that reasoning can access and process all sorts of *conceptual* representations, including those that promiscuously combine concepts across different domains. However, being strictly dedicated, domain-specific modules should strictly produce only conceptual representations pertaining to their specific domains. Perhaps they perform their computations in fragments of a language of thought (LOT) comprised by domain-specific conceptual representations. Yet, the remarkable flexibility of human cognition

[128] Cf. Cosmides and Tooby (1994), (1997), Sperber (1996), (2005), Carruthers (2006), Barrett (2015).

[129] Cf. Samuels (2012), Machery (2017), Weiskopf and Aizawa (2016), Woodward and Cowie (2004).

requires conceptual integration and inferential promiscuity across domains. What, if not some interfacing, cross-domain system, conceptually integrates and inferentially transforms domain-specific information? It could be proposed that language is such a system.[130] Perhaps it is LOT itself put to its higher-level cognitive uses - if, indeed, there is such a thing as LOT. Or perhaps the system is a natural language. At any rate, to the extent that there is such a medium of semantic-conceptual integration and promiscuous inference, it no more seems to operate as a domain-specific modular system. Rather, it operates as a *bona fide* domain-general system.[131] And to the extent that reasoning requires language – which idea rhymes well with M&S's own proposal that primordial reasoning is communicative - it presumably shares with it this very feature. For the content of conclusions and reasons can be about any domain of facts, including quite disparate domains. To drive the point home, think of analogical reasoning, in which the base domain and the target domain might often be quite different. This suggests that a cross-domain conceptual and inferential process is involved in drawing the conclusion based on analogies.

This holds even if we concede that conceptual modules contribute various pieces of pertinent information – e.g., object-level intuitive inferences producing information in the form of premises or background beliefs and metarepresentational inferences producing information about whether the former favor this or that answer to some question at hand. For those pieces must be properly conceptually and inferentially integrated for the conclusion – which can be about "virtually anything" - to be reached.[132]

It appears that M&S's account presupposes that the metarepresentational module performs the integration when *P* and *Q* are about different domains of facts: e.g., *P* being about the base domain D and *Q* about the target domain T. To figure out that *P* supports (e.g., based on analogy) *Q*, reason has to take into account what they are about

[130] Cf. Spelke (2003), Mithen (1996), Carruthers (2006).

[131] Carruthers (2006) argues that the integrative function of language is consistent with it being modular, provided our concept of module is not overly restrictive (as Fodor's (1983) original model is). It is however far from clear that his attempt succeeds. Cf. Machery (2017), Weisskopf (2010).

[132] The point was urged long ago by Fodor (1983), (2000).

and appreciate relevant connections between them. That presupposes cross-domain conceptual integration and inference. That being so, what remains of the claim that reasoning has a domain-specific, modular core, being only indirectly and virtually domain-general? It rather seems that its core is domain-general, no matter whether it takes place at the object-level or involves metarepresentations. For it potentially applies to *whatever* propositional representation (claim, belief, supposition), taking into account *what it is about*, and, based on this, what other contentful representations it supports, is supported by, is incompatible with, etc. One may say that this is what reason is for. But then it accomplishes its task due to not being "input restricted" (in any interesting sense). As far as I can see, this is what classical accounts of reason - as a flexible, domain-general faculty - have always assumed.[133]

Furthermore, which information is evidence for or against which conclusion is often a context-sensitive and holistic matter such that all *sorts* of background assumptions might be relevant. Consequently, to flexibly track, figure out or assess such relations, reasoning had better be an information-hungry process contextually receptive of all sorts of information. That means that it can access and use *any* kind of conceptual information (though not all at once) and bring it to bear on the task of figuring out what is evidence or reason for what, depending on the task and context, including collateral beliefs. From this perspective, it is a constitutive feature of our reasoning competence that we are able to identify – with varying degrees of success - relevant information. How exactly our minds accomplish that is very much an open empirical question. But nothing rules out the possibility that they can exploit various

[133] M&S sometimes say that reason attends to "relevant properties" of representations standing in reason-conclusion relations (cf. M&S, 2017, p. 145), such as that *P* makes *Q* plausible, that *Q* is coherent or incoherent with *P*, and the like (cf. Ibid., p. 329). The reason module is supposed to exploit regularities that consist of features of representations indicating such properties and relations. It is not clear from their account, though, just what kind of features those are. They do not seem to have in mind purely structural features such that underwrite formal-deductive inference. For their account does not presume that logic is the backbone of reasoning. Logic rather helps to make more transparent rational relations between propositional representations. But maybe they are supposed to derive from a degree of metacognitive confidence (cf. M&S, 2018). Even so, such confidence, just like the properties and relations it may indicate, would seem to require a grasp of what the relata are about and how they bear on one another. Since they can be about different domains, that again requires cross-domain thinking.

heuristic search and computational methods - e.g., based on past cases, analogies, etc. – to accomplish it.

The upshot of this prelude is meant to be this: if reasoning is an information-hungry process of this kind, it is not modular in any non-trivial sense of that term. I take it that for massive modularity to be an interesting thesis, it must distinguish modules from central systems as they are conceived in rival models. That requires, at a minimum, that they be *informationally encapsulated* at least in the following sense. They cannot access and draw on any kind of (conceptual) information in the course of executing their proprietary task. That is, once they are triggered by an input of the right type (which may be an output of a different module), they then draw only upon information from their more or less narrow proprietary database; that is, they do not have access to other information that is utilized by other modular processes or that is available to the total system. The reason for this is quite simple. If a cognitive system is allowed to interact with other systems not only by way of receiving input from them, but also by way of "querying" all sorts of conceptual information from them, or by way of accessing "globally broadcasted" conceptual information, then it is unclear whether it differs at all from a central process as construed by classical cognitivist models.[134]

So I conclude that if reason indeed accomplishes what M&S expect it to accomplish, it is unlikely to be a module in any interesting sense. Note that it won't do to say that reason's proprietary database is flexibly extendable. That again trivializes the thesis. For to maintain this is just to say that reason operates as if it could access any potentially relevant type of information. Indeed!

In view of these considerations, I do not share M&S's optimism that they have succeeded in making plausible the hypothesis that reasoning has a domain-specific, modular basis.

[134] And so to argue that a would-be central process arises from the interaction of modules so construed is to invoke central processes of sorts to account for central processes. Cf. Woodward and Cowie (2004).

### *5.2 Is Reason a Genetic Adaptation?*

Let us grant that reasoning, as a core competence of human mind, *somehow* evolved. M&S want us to grant more than this. They see a cognitive continuum between instinctive modular mechanisms (e.g., simple cognitive reflexes) and those that underlie acquired, including cultural, expertise (e.g., reading) that cannot be as such genetically prespecified, since they are relatively recent and there was not time enough for the genetic evolution to catch up. The former require no (individual or socio-cultural) learning, whereas the latter require substantive learning. In between, there are mechanisms that need more or less learning to mature or develop, and this learning is to a greater or lesser extent constrained and hence facilitated by innate, genetically prespecified information pertinent to acquiring the competence at hand. Clearly, in so far as it works modularly, reasoning is not a simple cognitive reflex. While this leaves open the possibility that reasoning is an acquired expertise, M&S suggest that it is somewhere "in between" - specifically, they suggest that the dedicated reason module is an evolved biological adaptation whose maturation is to some extent genetically constrained. I shall assume that this is, indeed, their considered position.

I admit that this is a theoretical possibility, if only because it is notoriously difficult to test reverse-engineering (functional design) analyses. That being said, adaptationist hypotheses based on such analyses should adduce some indirect evidence that favors them over alternative hypotheses. Now a *prima facie* alternative hypothesis that suggests itself is that a specialized and adaptive cognitive capacity is a design of cultural evolution, including its culturally mediated and scaffolded acquisition during ontogeny. At the very least, then, we could expect to see that M&S's evidence favors their hypothesis over this alternative. But I do not quite see that this is the case.[135]

What M&S do provide is, first, some cross-cultural evidence that people virtually everywhere – ranging from societies of hunter-gatherers to "civilized" societies – evolved justificatory or argumentative practices, though their aspects might differ across cultures (e.g., compared with Westerners, people from East Asian cultures might be somewhat less motivated to engage in adversarial argumentation and

[135] Dutilh Novaes (2018) makes the challenge explicit. Sterelny (2018) asserts that M&S made a promising yet defeasible case for their adaptationist hypothesis.

keener to engage in more cooperative modes of discussion). Second, evidence gathered from experiments with young children indicates some early emerging skills for giving justifications, producing or evaluating arguments (such as distinguishing circular from non-circular explanations or justification and preferring non-circular to circular ones).[136] Indeed, rudimentary forms are manifested very early, sometimes as soon as kids start to discourse (second year). Now the first kind of evidence indicates that reasoning is a human *universal*, while the second might indicate a *biological predisposition* to develop it. Perhaps the best explanation of this evidence is that the faculty of reason is a genetic adaptation (biologically evolved module). As M&S put it:

> Reasoning and argumentation are found everywhere, as we should expect if reason is an evolved module and if the production and evaluation of argument is one of its two main functions. (M&S, 2017, p. 286)
>
> While reason has obviously benefited from various cultural enhancements, the very ability of a species to produce, evaluate and use reasons cries out for an evolutionary explanation. (M&S, 2017, p. 4)

But this might be too quick.

First, universal cultural distribution of a behavioral pattern B is compatible with it being a behavioral adaptation to a *socio-cultural* ecology designed by cumulative *cultural* evolution. If B emerges - in some primordial mutation – and proves adaptive in an ancestral ecology of a human population P, it may subsequently become the target of incremental *cultural* elaboration and propagation within P. This opens up the possibility that social reasoning might be like this, especially if it co-evolved with language.[137] If such a social pattern of behavior was an adaptive fit in hypersocial ecologies of humans (coordinating, facilitating or stabilizing cooperation and verbal communication), then once it appeared in some rudimentary form, a pressure may have arisen (including for the reasons spelled out by M&S) for its incremental cultural elaboration and propagation in the population of ancestral

[136] Mercier et al. (2014). Mercier (2011), Castelain et al. (2018), M&S (2017, chapter 16).

[137] For the case of language, see Christiansen and Chater (2016) and Heyes (2018).

humans. In some sense, of course, humans must be biologically prepared for reasoning. The question is whether this concerns specifically reasoning or a set of more basic cognitive feats that, together with processes of cultural learning, suffice to produce it.

Cumulative cultural elaboration of behavioral patterns or practices over multiple generations is most likely psychologically supported by evolved social instincts (e.g., greater tolerance), neurocognitive circuits sustaining domain-general (e.g., statistical or sequential) learning processes, perceptual and attentional processes biased towards certain kinds of (social) inputs (voices, faces, eyes, gaze direction, points, gestures, etc.), and uniquely developed processes of sociocultural transmission (including joint attention, imitation, social learning, teaching, behavior-reading, metacognitive capacities or discourse). Some of those mechanisms are likely genetic adaptations not specific to humans. Others might be human-specific adaptations.[138] So, yes, social behaviors are cognitively regulated and some of their regulators likely evolved as genetic adaptations. But none of this warrants the conclusion that the best explanation for the fact that a social behavior or skill can be found across cultures is that it is supported by a genetic adaptation (information) of its own (i.e., facilitating or scheduling specifically its production and acquisition). Alternatively, once it emerged, it could have reproduced, mutated and been fine-tuned via available socio-cultural channels of transmission. The same applies to its acquisition. Information relevant to acquiring a competence can be embedded in information-rich environments, without having to be robustly genetically prespecified. Learners can extract it due to the aforementioned processes, including being socially scaffolded (guided, encouraged, discouraged, instructed).[139]

If so, the universal cultural distribution of interactive reasoning is not the kind of evidence that, on its own, favors the view that it is a design of genetic adaptation. M&S should give more reasons to convince us that the case of interactive reasoning is different.

---

[138] Cf. Heyes (2018).

[139] Sterelny (2003), (2012) focuses on this kind of *epistemic engineering* of human environments (a form of cultural niche construction), including developmental-learning environments.

M&S's developmental evidence, too, is quite compatible with the hypothesis that interactive reasoning is a design of cultural evolution. Their evidence could bear some weight if it highlighted a *poverty of experiential input* vis-à-vis a precocious and tightly scheduled development of reasoning skills. This could indicate that the acquisition of reasoning is constrained by specific innate information. Yet, although reasoning competence likely co-develops with language from early on, a) kids' early performance (e.g., preferring more to less premises or non-circular to circular explanations) leaves much to be desired and b) the evidence does little to show that kids have a limited access to relevant information to gradually develop or improve it. As they become more proficient, they are also increasingly confronted – through direct interaction or observation - with linguistic-conversational stimuli having to do with justification and argumentation. Indeed, it might be argued that the dependable regularities that one needs to be sensitive to in reasoning (or in order to become a proficient reasoner) are precisely such linguistic regularities. Thus the evidence does little to exclude the possibility that youngsters come to gradually acquire a competence in a cultural mode of communicative interaction, based on more basic biases and resources, of which some are domain-general, while others serve special tasks.[140]

Note also that the evidence reviewed so far does little to support specifically the hypothesis that the cognitive adaptation takes the form of a dedicated module. Here M&S rather invoke evidence that finding or assessing reasons is often a spontaneous, fast, effortless, opportunistic and satisficing process.[141] But even if we take these data at face value, it is too quick to conclude that the best explanation thereof is that reasoning is based on a modular adaptation producing intuitive inferences about reasons.

[140] For instance, young children may prefer more premises simply because they prefer more information. Indeed, even though they tend to prefer non-circular to circular explanations, they also tend to prefer former to no explanations at all. It thus seems that children`s understanding of reasons is initially (between three and five years) fairly limited and develops progressively. Cf. Koenig (2012), Köymen et al. (2020).

[141] Cf. Mercier (2012).

A conservative alternative – one that I have attempted to vindicate - is that reasoning works as a domain-general central process that can process, access and use virtually any kind of conceptual information. However, there is no in-principle reason why reasoning could not use heuristic search methods that may render its performance more or less fast-and-frugal, depending on the context and task at hand.

This, I submit, is compatible with assigning intuitions a role in reasoning. For one thing, in reasoning we take certain things as it were for granted, whether in the form of a background, ultimate premises or basic inferential moves. Such attitudes - taking for granted, being confident, trusting – may be called intuitive. For another, intuitions about reasons may well reflect a socially mediated tuning of justificatory and argumentative skills. Some issues or problems are more familiar or common for us to reason about with others. So we might form quick judgements (intuitions of sorts) about what reasons would be appropriate that facilitate our reasoning with respect (or by analogy) to them. If so, their presence, absence or strength in part helps explain why we sometimes find it easy to produce or evaluate reasons, whilst other times we must try hard or are at a loss. And to the extent that such intuitions reflect social constraints on (norms of) *good reasoning* implicit in those practices, they might contribute to counterbalancing biased responses that interfere with good reasoning. Indeed, such sensitivities might help even in individual ratiocination.[142] But none of this compels us to posit a dedicated module for intuitions about reasons.

[142] As Sterelny (2012), (2018) points out, cognitive flexibility was likely an adaptive strategy in the changing natural and social ecologies of ancestral humans. Thus a cognitive competence that had originally evolved to cope with social challenges could subsequently prove useful for other social or individual uses, becoming a sort of multi-purpose tool (somewhat as a human hand is a useful device for many purposes). In addition, M&S's pessimistic evaluation of individual ratiocination is not beyond the pale in so far as it draws on experimental evidence amassed by the psychology of reasoning literature. As they know themselves, there is a real issue of whether, to what extent or under what interpretation experimental paradigms are ecologically valid – hence telling us something relevant about the scope and limits of human reasoning competence - and with respect to what normative standards. There is thus a possibility that even human individual reasoning competence could be tested using ecologically more representative situations and designs - with the possibility of obtaining more optimistic results.

Other than that, I have found no distinctive evidence in M&S's work in support of the claim that we have a biological predisposition specific to reasoning in the form of a genetic adaptation (such as its neurocognitive implementation, dissociation effects or specific breakdowns due to brain damage or genetic disorders affecting specific brain areas). Even if there were additional evidence of this sort, it would be far from decisive, as the case of reading shows.[143] Reading, M&S themselves concede, is a culturally elaborated and transmitted competence subserved by a specialized ("recycled") neural circuitry (the visual word form area) that can be selectively impaired by genetic disorders such as dyslexia. In their own terminology, it is an acquired (if biologically supported) expertise, rather than an innate instinct. Perhaps reasoning, too, is more like an expertise that exploits our developmentally plastic brains and culturally constructed developmental and learning environments, rather than a modular cognitive adaptation based on an innate learning instinct or program.[144]

## 6. Second Assessment: Three Problems for the Metarepresentational View

In this section I finally probe M&S's metarepresentational account of reasoning. Recall, to begin with, that reasoning is officially characterized by M&S in the following way:

> When we reason, conclusions do not just pop up in our mind as self-evident; we arrive at them by considering reasons to accept them. (M&S, 2017, p. 52)

What exactly does it take to "consider reasons"? As M&S explicate it, when one arrives at a conclusion *Q* by considering some supporting reason *P*, one ends up with a *reflective* (*reasoned*) *conclusion*

> […] accepted because of higher-order thinking (or "reflection") about it. (M&S, 2017, p. 150)

[143] Cf. Heyes (2018), Heyes and Frith (2014).

[144] See Heyes (2018) for an application of this strategy to social learning, mindreading or language.

We already know that M&S claim that higher-order thinking (or reflection) involves entertaining a *conscious* representation of *P* as a reason for *Q*.[145] Call this representation *R*. Indeed, many formulations of M&S suggest that in entertaining *R* one quite literally represents the content to the effect that: *P* is a reason for *Q*, *P* supports *Q,* or some such thing. They do not say that one *treats P* as a reason for *Q*, where this might be just a matter of acting *as if* one consciously represented *P* as a reason for *Q*. They do not say that one just represents both *P* and *Q* and makes a transition from the former to the latter. Rather, what they say is that one must somehow represent the relation of support between *P* and *Q*. To wit: they say of such representations that

> […] their form is "*P* is a reason for *Q*" (for example, "That Amy has a fever is a reason to call the doctor"). (M&S, 2017, p. 148)

As M&S put it, *R*'s content concerns the *reason-conclusion relationship*, whose relata are representations themselves. That is why *R* is supposed to be a *metarepresentation*. On a natural reading of this, *R* has a propositional content in which something like the relational concept *x is a reason for y* is applied to *P* and *Q* as arguments.

### *6.1 The Problem of Oversophistication*

My first challenge is that, taken at face value, this metarepresentational account oversophisticates reasoning. Presumably, if the reasoner needs to represent the reason-conclusion relationships as such, she needs to possess and apply the quite sophisticated concept *x is a reason for y* (or some cognates expressing support relations). But are there not smart creatures, e.g., young kids, capable of making, and appreciatively responding to, at least rudimentary reasoning (justifying or arguing) performances,

[145] Reflection – attending to or considering reasons - is a conscious act or process. It is worth noting, though, that M&S think that such metarepresentations are typically outputs of intuitive inferential processes. This does not matter for my purposes here. I shall have something to say about this aspect of their view later.

who might not yet possess that concept (or cognates)?[146] If so, M&S's account seems too restrictive, because it cannot accommodate such cases.[147]

Admittedly, one might bite the bullet and say that such creatures do not reason, lacking the prerequisite reflective abilities. However, M&S do not want to say this about kids in particular (as opposed to non-human animals). In fact, they provide some evidence themselves that kids around their third year (or even earlier) manifest some nascent skills of argumentation or assessment thereof.[148] They refer to studies indicating that kids this young prefer non-circular reasoning (e.g., "X went this way because I saw it go in this direction") to circular reasoning ("X went this way because X went this direction"). Supposing now that this indeed indicates nascent reasoning abilities, do kids this young also possess the concept *x is a reason for y* (or its cognates), apparently required to metarepresent reason-conclusion relationships? On M&S's own account they should – or they do not reason at all.

The problem is that M&S adduce no direct evidence of such abilities in kids this young. The evidence that kids prefer non-circular over circular arguments might indicate some understanding of the object-level connective "because." But it does not indicate any mastery of the concept *x is a reason for y* and the ability to apply it in higher-order thoughts. Kids might have some practical competence with explanations or arguments involving other dialectical devices ("no," "but," "so," etc.), which play a role in expressing attitudes of rejection, challenge or inference. In so far as this competence indicates some sensitivity to rational connections between claims, it might be taken to indicate a capacity for reasoning. Yet, there is nothing obviously metarepresentational about such dialectical turns; on the face of them, they all belong to object-level discourse. So this early emerging competence reveals, at most, an

[146] Such objections have been formulated by a number of authors. Cf. Boghossian (2014), Broome (2013), McHugh and Way (2016). Their target was, for example, Pettit's metarepresentational account of reasoning (cf. Pettit 2007). See also Pettit's response (2016).

[147] This particular challenge applies to both reasoning (prospective) and justification (retrospective), in so far as both involve representations of something as a reason for something.

[148] Cf. Mercier et al. (2014), M&S (2017, chapter 16), Castelain et al. (2018).

*implicit sensitivity to reasons* on kids' part that falls short of a full-blown understanding of them as such.[149]

Pending any independent evidence that young thinkers possess sophisticated concepts and representational abilities, there is a more parsimonious account of their early reasoning competence, consistent with M&S's view that it is originally a social competence, eventually internalized and co-opted for private-individual thinking. On this account, their reasoning competence co-develops hand in hand with their verbal-communicative competence and is primarily embodied in their dispositions to produce and respond to various dialectical moves in argumentative, explanatory or justificatory exchanges. No doubt, this already requires non-trivial cognitive abilities. But it does not specifically require the ability to conceptualize reasons *qua* reasons. Such an ability may be a later development towards a full-blown reflective competence but not a prerequisite of the reasoning competence as such.

### *6.2 The Specter of Vicious Regress*

The second challenge that I want to flesh out is that the metarepresentational account invites the vicious regress problem. It specifically threatens M&S's account of *reasoning proper* (considering and using reasons prospectively), at least if we take it at face value.

The way M&S characterize such reasoning *prima facie* suggests that our taking account of reasons contributes to changing our view - adding beliefs, subtracting beliefs or both. So it is said to consist in prospectively considering reasons as "arguments in favor of new decisions or new beliefs" (M&S, 2017, p. 128). We are

[149] One could argue that the ability to respond to requests for reasons with "becausal" claims is sufficient evidence for the ability to entertain higher-order thoughts to the effect that *P* counts in favor of *Q*. Cf. Müller (2019). But why should it be? It seems perfectly possible that young thinkers can do this without being able to *express* any higher-order thoughts to the effect that something counts in favor of something else. Three-year-old kids might be a case in point. If they do not have such expressive resources, what warrants the attribution of higher-order thoughts to them? In so far as they have any understanding to the effect that *P counts in favor of Q*, it might be a form of practical *knowing how to treat* something as a reason for something else. They need not represent reasons as such. I am grateful to an anonymous referee for pressing me to address this argument.

also told that it is a process of pursuing the goal of extraction of new information from information already available *by* attending to reasons (Ibid., p. 53). And we are told that when we reason, we arrive at a conclusion *by* considering the reasons to accept them (Ibid., p. 52) and that we accept the conclusion *because* of higher-order thinking (or "reflection") about them (Ibid., p. 150). This would seem to apply also to cases when we assess the reasons intended by others to convince us of something – here, too, we might end up believing something new.

I have explained that M&S explicate what it takes to consider reasons in terms of entertaining higher-order representations of reason-conclusion relationships. Putting this together, we seem to be left with the following metarepresentational account of reasoning (henceforth MAR)[150]:

> (MAR) *Reasoning involves entertaining a conscious representation R to the effect that one's premises P support one's conclusion Q and arriving at the conclusion Q in part because of that fact.*

Assuming for the time being that MAR is M&S's view, I will now argue that it faces a problem resurfacing in the ongoing philosophical debate about the nature of reasoning (or inference): namely, it is far from clear how *R* could contribute to concluding *Q* other than via expanding the premise-set of the original inference or being involved in a further piece of higher-order reasoning.

Consider this suggestion: one concludes *Q* in part because one accepts both *P and R,* expanding in effect the premise-set of the original inference. But this inference presumably requires another representation $R^1$: i.e., that *P together with R support Q*. What, now, is the role of $R^1$ in the inference from the expanded premise-set? As Lewis Carroll pointed out long ago – and many contemporaries would concur with him on

[150] This, I submit, can be interpreted as a possible elaboration of what Boghossian (2014, p. 5) calls "the taking condition": *Reasoning* (*inferring) involves the thinker taking his premises to support his conclusion and drawing his conclusion because of that fact.* My concerns in this section are analogous to those that Boghossian and others have articulated with respect to several possible elaborations of the taking condition.

this score – a vicious regress lurks here.[151] The moral is well known, even well worn. Though we might iterate the process a few times, at some point there must be some inference (or piece of reasoning) that no longer requires yet another representation $R^n$. And this should give us pause: Why assume that concluding *Q* based on *P* requires a higher-order representation *R* in the first place?

It would be uncharitable, I think, to insinuate that M&S assign *R* the role of a further premise. In what other way can it contribute? One possibility is that *R* somehow *enables* concluding *Q* from *P*. But how? Perhaps *R* represents an "inference ticket" of sorts, licensing one to conclude *Q*, given *P*. We might think of this as a *rule of inference* that one consciously represents and accordingly applies to the premise *P* in order to obtain the conclusion *Q*. However, then the act of its application to *P* looks very much like another piece of reasoning. As Boghossian puts it:

> On this Intentional construal of rule-following, then, my actively applying a rule can only be understood as a matter of my grasping what the rule requires, forming a view to the effect that its trigger conditions are satisfied, and drawing the conclusion that I must now perform the act required by its consequent. (Boghossian, 2014, p. 13)

Does this piece of reasoning involving the rule require yet another representation of a higher-order rule? A version of the regress problem seems to re-enter through the backdoor.

It may be retorted that the process of rule-application is not a case of reasoning at all, but of something else altogether. Then the regress problem would not get off the ground. Maybe, but it is not clear why we should accept this, other than that it avoids the problem. The description provided above suggests quite an exemplary piece of person-level reasoning. And it begs the question to assert that it does not involve higher-order representations of reason-conclusion relationships, and hence is not reasoning. For this is what is at stake. And one could argue that if we allow that such

---

[151] Carroll (1895). Cf. Boghossian (2014), Wright (2014), Broome (2013), Hlobil (2014), Valaris (2014), McHugh and Way (2016). To propose that *R* has a conditional (object-level) content *If P, then Q* does not seem to circumvent this basic problem (though it helps with the problem of oversophistication).

inferential processes need not involve higher-order representations of reason-conclusion relationships, we should wonder why the original inference is supposed to involve them.[152]

One might also argue that the specter of regress arises only for this *intentional* construal of *rule-following*: i.e., the rules being involved in reasoning as explicit objects of intentional attitudes. But there might be an alternative model of rule-following that avoids it, not presupposing that rules bear on reasoning in that way.[153]

There is, I think, something to be said for this idea. However, it is not M&S's strategy. As they characterize reasoning, one attends to or considers reason-conclusion relationships by entertaining a conscious, higher-order representation typified by *R*. Plus, their characterization implies that such a representation contributes to accepting the conclusion and that this is what distinguishes reflective conclusions from intuitive ones. Any view of this sort is *prima facie* vulnerable to a version of the problem discussed here: it is hard to see how such a representation can contribute if not by expanding the premise-set of the original inference or being involved in yet another, higher-order piece of reasoning.

What M&S do argue is that support relations must ultimately be *intuited*. And they suggest that this solves the problem of vicious regress. But what they address here is a slightly different conundrum.[154] They note that the reason-conclusion relationship$_1$ represented in a piece of reasoning$_1$ can itself be inferred via a further piece of

---

[152] M&S appear to endorse an information-processing account according to which the rule-like process of transforming the representation of the premises *P* into the representation of the conclusion *Q* is subpersonal and unconscious. But then the question is what (if anything) the conscious metarepresentation *R* of the reason-conclusion relation contributes to this subpersonal process. I address this issue in the next section. Here I proceed on the assumption that, taken at face value, M&S's official account of reasoning implies a substantial causal-explanatory role of *R* in the inferential passage from *P* to *Q*. My point in this section is that it is far from clear that this can be explained in terms of intentional, person-level rule application.

[153] Two recent attempts are Broome's dispositional model of rule-following (Broome 2013) and Boghossian's suggestion that rule-following is a *sui generis* primitive phenomenon (Boghossian 2014). Wright (2014) and Valaris (2018) critique the rule-following models of inference.

[154] M&S (2017, pp. 131-132).

reasoning$_2$ involving a representation of a yet higher-order reason-conclusion relationship$_2$, whose conclusion is the reason-conclusion relationship$_1$. At some point, though, this process must stop, or reasoning would never get off the ground. In such cases, we *intuitively see* that something is a reason for something else, where the unreflective inferential process generating that intuition does not involve any other representation of reasons. However, this line of thinking presumes that some kind of representation of support relations is involved whenever we reason! And the original regress problem targets this very presumption. Even supposing that such representations are, in the last instance, intuitively formed, we still face the question of how they contribute to concluding something from something else if not via further reasoning. We have no answer to this yet.[155]

### *6.3 The Problem of the Cognitive Role of Reasons*

So far I have proceeded on the assumption that M&S characterize reasoning (proper) as a process of pursuing the goal of extracting new information by (via, through) attending to reasons. But I suspect that, at the end of the day, M&S's would not defend MAR vis-à-vis the problem of vicious regress. For other things they say suggest a very different view of the role of reasons in reasoning. To wit::

> […] we typically construct our reasons after having reached the conclusions they support. (M&S, 2017, p. 138)
>
> Contrary to the commonsense view, what happens is not that we derive intuitive conclusions from reasons that we would somehow possess. What we do, rather, is derive reasons for our intuitions from these intuitions themselves by a further process of intuitive backward inference […] We typically construct our reasons as an after-the-fact justification. (M&S, 2017, p. 142)

There are three claims here. First, justificatory uses of reasons are the most typical uses. Second, reasons are constructed "after the fact." Third, their construction

[155] There are attempts to avoid the problem by postulating *rational intuitions* of sorts – cf. Chudnoff (2014). But as these have a rather different structure, I shall not address them. An alternative could be to say that entertaining such a representation is just *constitutive of reasoning* and hence that there is no need for an extra contribution. Again, however, there is no hint that M&S think along these lines, and so I shall not address it.

or reconstruction is a matter of intuitive backward inference. As a reflective process, reasoning indeed requires that one (meta-)represents *P* as a reason for *Q*. Yet, it is not *because* of this fact that one believes what one does. Rather, paying attention to reasons might be a form of metacognitive control accompanying and/or rationalizing something that already happened. Now if it is not our grasp of reasons as such that makes us make up or change our views, MAR has to give (in particular, its second conjunct). But then the problem of vicious regress evaporates with it.

If this is M&S's considered view, it warrants a separate discussion.

For the two basic interactive uses of reasons, this suggestion makes good sense. When we *justify* our view (action), we construct reasons "after the fact" in order to justify it (as well as ourselves as its holders) as reasonable. So we do not believe *Q* *because* we now conclude it is based on *P*, still less *because* we represent *P* as a good enough reason to accept *Q*. *Q* sits already in our "belief box," as it were. The same is true when we *argue* to convince others to accept something that we already believe, supplying supporting considerations to this end. Actually, argumentation has an element of justification in it: as we attempt to justify our view, we at the same time attempt to convert others to accept it as true as well. Here, too, we do not hold our view *because* we now conclude it from the reason provided by ourselves or *because* we represent it as a reason to accept or believe it.

What about the other uses of reasons that, according to M&S, are derivative: internalized individual justification, evaluating reasons provided by others or individual inquisitive reasoning? Can the model that fits the paradigmatic uses be extended to them? To flesh out this suggestion, let us consider them case by case.

First, it straightforwardly applies to the case of individual justification, which privately mimics the structure of interpersonal justification (we often search for reasons that could eventually justify our views or actions to relevant others).

Second, what about the cases when we assess reasons meant to convince us? Don't we sometimes make up or change our minds on some issue at hand based on evaluating the reasons provided by others? Intuitively, it seems so. But maybe intuition is not quite a reliable guide here and a version of the model under consideration applies here, too. Here is what M&S have most recently suggested:

> […] in the kind of elementary case we are considering, *A comes to see the reasons given to her as strong because she was convinced by them* or as weak because she was not. This stands in stark contrast with the standard view of reason, according to which epistemic judgement on reasons should precede and determine cognitive effects such as acceptance or rejection of the conclusion. (M&S, 2018, p. 6)

So epistemic judgments on reasons – which, according to M&S, are themselves produced by backward intuitive inferences - do not determine cognitive effects such as acceptance or rejection of a conclusion. There is the following analogy with retrospective reasoning. First, certain considerations *P* (here provided by the arguer) succeed to convince us to also accept *Q*. Then, based on the level of our resulting (metacognitive) confidence in *Q*, we intuitively infer that *P* is a good enough reason to accept *Q*, thereby sort of rationalizing our belief in it. We can then say that *Q* is our reflective conclusion-belief. Yet it is not *because* we see *P* as a good reason for *Q* that we hold *Q* (it might have a reassuring effect though).

Third, what happens when we conduct an internal argumentative dialogue (perhaps with imaginary others or, perhaps, ourselves playing both roles) in situations in which there is something at issue (*Q*?) and we are open-minded as to what stand to take? This is a form of prospective individual reasoning, which is an internalized version of public argumentative dialogues. But even here, I imagine, one could analogously argue that we might eventually come to accept *Q* not *because* of taking into account the fact that *P* is a good reason for *Q*, but because those reasons *P* somehow *convince* us to place some confidence in *Q*. Based on this confidence, then, we use a backward intuitive inference to construct *P* as a good enough reason for *Q*. In this sense, *Q* can be said to be our reflective conclusion.

Finally, there is pure inquisitive reasoning, in which we address the issue on our own without taking into account what reasons could convince others. This, according to M&S, is a flagship of the traditional, intellectualist account of reason. However, they tend to dismiss or downplay such cases on the ground that they are marginal (plus, much of what theorists consider to be cases of inquisitive reasoning might be just "problem-solving" that need not involve attention to reasons at all). After all, reason was not designed for individual ratiocination but for interpersonal

reasoning. Still, to the extent that there *are* cases of individual ratiocination (and M&S do not deny this), they should say something about them. Perhaps they could try to extend the model to cover them as follows. When addressing on our own the issue of whether *Q*, we try out several considerations that we find more or less appealing, eventually (possibly quickly) ending up with the considerations *P* that sway or convince us to accept *Q*. Only when we already accept *Q* with some confidence, we intuitively infer that *P* is a good reason for *Q*. Then, again, we can be said to uphold *Q* as a reflective conclusion. But even if we somehow base *Q* on *P*, we do not uphold *Q* *because* of that metarepresentation.

If this interpretation is on the right track, then one may argue that no vicious regress arises for prospective reasoning, since one does not arrive at *Q* from *P* via linking metarepresentations of the reason-conclusion relationships in the first place.[156] But note that this account still faces the problem of oversophistication. For it does not dispense with higher-order thoughts; it just does not claim that they are required to fix or update beliefs.

Putting this to one side, my main concern is that it is not clear to me how exactly to understand the process of being "convinced" or "swayed" by the reasons *P* to accept *Q*. This is the core of the strategy applied to evaluative and inquisitive reasoning: epistemic judgments on reasons are produced after the fact, by a backward intuitive inference reflecting the measure of our metacognitive confidence in *Q*, which was already produced through our being convinced by the reasons *P*. Presumably, the latter is not a reflective process. The whole point of this strategy is to ensure that reflective judgement comes after the fact. So it should be an intuitive process. Well, but then *P* should not figure in it explicitly *qua* a reason for *Q*. *Ex definitione*, when one intuitively infers *Q* from *P*, one does so without representing *P* as a reason for *Q*. However, if X can accept *Q* based on *P* without representing *P* as a reason for *Q*, one wonders what warrants the talk of being convinced "by reasons," if not the assumption that *P* must be somehow *implicitly* treated by X as a reason for *Q* (without being explicitly represented as such).[157]

---

[156] See Koziolek (2017) and Richard (2019) for accounts of reasoning that are similar in this respect.

[157] If M&S mean that the representation of *P* just causes the representation of *Q* in the way typical for

However, this line is not open to M&S, who explicitly oppose the view that reasons can be only *implicitly* present in reasoning (M&S 2017, p. 118). Indeed, once one takes this line, it makes good sense to treat as *reasoning* activities involving some form of metacognition, but not yet representations of reasons *qua* reasons. Sensitivity to reasons may first be manifested in the practical mastery of dialectical moves (claiming, justifying, querying, challenging, etc.) that falls short of a full-blown metarepresentation. I submit that this is an option worth taking seriously in light of the previously discussed problem of oversophistication of reasoning. And I shall show in the next chapter how the inferentialist account of reasoning elaborates it.

One way or another, according to the alternative account of reasoning under consideration here, we take account of reasons after the fact. On the one hand, this account might avoid the original problem of vicious regress discussed previously. On the other hand, it seems hard-pressed to account for the intuitive difference between forming (or reforming) beliefs from an appreciation of reasons and being caused to believe something by unreflective inferences (though in ways that track reasons). As Mathew Boyle aptly describes the former kind of rational (or reflective) activities, they are:[158]

> […] characterized by a certain intelligibility from the subject's own perspective, an intelligibility that involves the subject's understanding why she acts as she does. The relevant sort of understanding, however, is not merely a collateral or *post facto* understanding. It is not merely that, if a subject S performs a rational activity A for reason R, S will in consequence be aware that

object-level, intuitive inferences, it is not clear why they talk about "reasons," given that their own notion of *reason* is metacognitive: reasons have a psychological reality only by being consciously, explicitly represented as such. Plus, it does not sit well with other things they say. Commenting on the evaluative case, they say that the "information communicated as reasons comes with a specific presumption of relevance: it is intended to achieve relevance by supporting the conclusion that the communicator asserted or implicated" and is interpreted accordingly by the addressee (M&S, 2018, p. 6). When the information - communicated and interpreted *as reasons* - convinces her, she infers the strength of reasons based on her confidence. To my ear, this suggests more than just a causal relation between the representation of *P* and the conclusion *Q*.

[158] Boyle (2012) understands „activities" broadly as including thinking, reasoning or deliberating.

> R is her reason for A-ing. Rather, S's taking R to be a reason for A-ing must itself explain (in a characteristically rational way) S's A-ing. It is the capacity for this kind of directive understanding – an understanding that is the ground of one's doing what one takes there to be reason to do – that distinguishes rational animals as such. In virtue of this capacity, they are intelligent in a special sense: their thoughts and actions can be guided by an assessment of reasons, and they can adjust their beliefs and actions by reflecting critically on such assessments. (Boyle, 2017, p. 112)

If metarepresentations of reasons are add-ons formed after the fact, reasons come too late to underwrite genuine cognitive difference between the two cases. For all their fine insights, I doubt that M&S have given us reasons to dismiss that difference as unwarranted.

## 7. Conclusion

Reason is a capacity for reasoning. But what is reasoning? What is it for? How does it work? And what light do answers to these questions shed on the perennial question of human rationality? In this chapter, I started my discussion of these issues by focusing on and assessing a naturalistic account recently developed by Hugo Mercier and Dan Sperber. Their main hypothesis is that reason is a capacity to consider and assess reasons to accept something and that capacity was originally and primarily designed or fine-tuned for interpersonal justification and argumentation. This strikes me as a plausible claim. However, Mercier and Sperber articulate other hypotheses that are less convincing. First, the idea that reasoning could have been designed and fine-tuned to cope with the specific challenges and opportunities afforded by ultrasocial ecologies of our ancestors is attractive. But we need more compelling evidence to accept the hypothesis that it is a biological design of natural selection. Second, the hypothesis that reason is a module loses much of its plausibility once we see that identifying something as evidence for something else requires cross-domain processes of conceptual integration, comparison, analogy, etc., that it is not input-restricted in any interesting sense, and that it can access and use as relevant any kind of information in its context-sensitive *modus operandi*. Third, reasoning may require some sensitivity to rational links between claims or beliefs. But metarepresentation might not be its *foundation*, though it is a key component of our full-blown reasoning capacity.

# Chapter 4

## *Reasoning As Giving and Asking For Reasons*

### 1. Introduction

Arguably, some sensitivity to reasons is required to distinguish human reasoning as a species of person-level, reflective thinking from other kinds of thought processes not so governed. Indeed, reasoning, so understood, may originally and primarily be an activity at the *inter*personal level. But the previous chapter suggests that we should distinguish two claims. (1) Reasoning requires some sensitivity to rational relations between claims, challenges, etc. (2) This sensitivity requires metarepresentations of rational relations. (1) is appealing, properly elaborated. However, (2) is a much more contentious claim – indeed, the common denominator of the difficulties discussed previously.

But perhaps we can uphold a version of (1) whilst dispensing with (2). In this chapter I argue that the inferentialist approach to reasoning in terms of the skills to play the game of giving and asking for reasons suggests a way to go, precisely because it allows us to dispense with (2). Indeed, it offers a distinctive philosophical version of interactionism, according to which the primary reasoning competence consists in a

practical mastery of making and treating claims of oneself and others as apt to stand in need of justifying reasons and supplying reasons for or against other claims. In this respect, inferentialism and Mercier and Sperber's account are congenial. But their theoretical goals and methodological approaches are very different. On the one hand, I shall argue that the inferentialist approach suggests a way to avoid some problems confronting Mercier and Sperber's account of reasoning. On the other hand, noting that the question of "Why do we reason?" has been neglected by its proponents, I shall outline how inferentialists could approach it. Here I find evolutionary approaches in the style of Mercier and Sperber's congenial: up to a point, we can see why and how communicative and reasoning activities and practices could have been in the interest of creatures seeking to further their cognitive or social goals. But one may worry that such interactionist approaches to reasoning fail to do justice to its cooperative nature. I focus on Michael Tomasello's articulation of this worry.[159] I argue that Tomasello might go too far in the collectivist direction and conclude that a more plausible account should appreciate various interactive contexts, uses and functions of human reasoning.

## 2. Navigating a Space of Reasons Without Representing it as Such

The core inferentialist idea, we have already seen, is this: to learn to skillfully play the social game of giving and asking for reasons is to learn to reason from and to claims. At a minimum, one must be *practically* able to treat some public utterances as having the significance of claims and assess them as correct or otherwise by adopting certain practical-normative responses. This then involves treating some inferences from and to claims thereby made as good – licensing or excluding other claims, as well as being licensed or excluded by yet other claims (including being prepared to discriminate, rebuke or correct deviations from such proprieties). For all that, however, one does not need to go "meta" in the sense of making assertions or forming beliefs about the properties or relations of assertions, claims, beliefs or inferences. One must only have a potential to develop, drawing on lower-level abilities, higher-level abilities enabling reflection. On Brandom's account, this sophistication manifests itself in the mastery of expressive-logical concepts. But normative-epistemic concepts – e.g., the concept of *something being a reason for/against something* – are yet other means of reflection.

[159] Cf. Tomasello (2014).

### *2.1 The Oversophistication Problem Avoided*

This suggests an account of basic reasoning competence that avoids the oversophistication problem. Consider the following argumentative exchange:

A: (*P*): "Fred is in the kitchen."

B: "Really?"

A: (*Q*): "Because I saw him go there."

B: (*R*): "But I saw him go to the garden."

A: (*S*): "No, that wasn't Fred but John."

A and B play the game of giving and asking for reasons, the issue at hand being whether Fred is in the kitchen. They treat each other's claims, queries or challenges as having the point of giving, requesting or probing reasons. On the one hand, this interpersonal process of reasoning does not involve explicit representations of rational connections between *P, Q, R, S* in judgments to this effect: that *I saw him go to the kitchen is a reason to conclude that Fred is in the kitchen*, etc. On the other hand, this exchange of reasons features constructions – discourse markers - that do indicate such rational links.[160] Now, A and B could make those reason-conclusion relations explicit provided that they possess certain sophisticated concepts. This would indeed require metarepresentational skills. Yet, a young thinker might be able to master, use and comprehend such constructions – initially, perhaps, in simpler exchanges - without yet being able to make such explicitating claims or judgments. This being so, it seems implausible to deny such a thinker the sort of ability to track rational relations between claims, challenges, etc., though he or she might not yet have sophisticated skills or concepts.

In my humble opinion, this account (however provisional) is developmentally more plausible than M&S's metarepresentational account: to possess (rudimentary) skills of reasoning is to display some practical mastery (*know-how*) over such

[160] Conclusion and premise markers such as "so," "hence," "thus," "because" (etc.) are tailor-made for this task; so, too, are words indicating contrast or disagreement (incompatibility) such as "but," "no," etc. Discursive exchanges featuring such devices indicate – without explicitly stating – what the game-players treat as correct inferential moves. Recall that in Chapter 2 I attempted to elaborate this thought.

discursive moves and turns in argumentative, explanatory or justificatory exchanges. Metarepresentations are not required. Hence the oversophistication problem can be dealt with.

### *2.2 The Specter of Vicious Regress Dispelled*

This account implies that it is possible to make moves in the space of reasons without actually representing them *as* such moves. One must only be appropriately sensitive and responsive to reasons in the course of playing the game of giving and asking for reasons. At the most basic level of material inferences, to discriminate that (*P*) "This is a German Shepherd" is a reason for (*Q*) "It is a dog," is to be disposed (in the sense of *know-how*) to characteristic, normative responses: including rebuking, correcting or challenging one who asserts *P* but then refuses to assert *Q* (upon being properly prompted). If one's verbal behavior displays such a pattern, we can say that one is in the game of reasoning. In this sense, one does not have to actually entertain a thought to the effect that *P* is a reason for *Q*. Likewise for material incompatibilities or inferential moves based on them – e.g., rebuking, correcting or challenging one who utters "It is a German Shepherd," then uttering "It is a fish." To discriminate and honor such relations in one's responses of this kind does not require that one actually represent them. I suspect that the mundane game of giving and asking for reasons proceeds to a large extent without game-players actually entertaining such higher-order thoughts. Here, again, I am on the same page with Boyle:

> […] even for those of us who have mastered such concepts, what is essential to our appreciation of reasons is not our ability to think thoughts involving such higher-order concepts, but our ability to understand and respond relevantly to certain kinds of "why?" questions about first-order propositions we believe and actions we perform. If my decision to do A is challenged by someone who asks "Really, why do A?", I can understand what kind of response is being demanded – namely, one that identifies considerations that speak in favor of A-ing – even if I lack sophisticated concepts of rational appraisal such as is a reason for . Likewise, if my belief that P is challenged by someone who asks "Why accept P?", I may be able to respond relevantly to this challenge without possessing concepts such as is evidence for. To have the capacity to believe and act in ways guided by an appreciation of reasons consists fundamentally in

> a capacity to understand such questions (which one may put to oneself even when they are not put by another person) and to govern one's beliefs and actions according to one's satisfaction with one's own answers to them. (Boyle, 2017, p. 113)

Now the specter of vicious regress is premised on the assumption that such higher-order thoughts mediate every case of reasoning. Because on the account advanced here such thoughts are not required, the problem of vicious regress does not get off the ground in the first place.

We could further expand on this line of reasoning by pointing out that some basic inferential moves are always treated as primitively correct - or the game of reasoning would not get off the ground. Again, however, to discriminate and honor them in practice as correct – including recognizing transgressions, responding to transgressions appropriately, avoiding transgressions – does not require that one actually entertain the thought to the effect that there is such-and-such rational relation. Having at disposal the right conceptual capacities, one might express such relations – making them explicit. That does not mean, though, that they thereby cease to be primitive. They continue to be so until properly probed. Though possible in principle, probing them is not a free lunch. To probe them one needs to *reason*, and the chances are that, with respect to some basic inferential moves, one will hit the bedrock. That is, one will either rely on the very inference that one attempts to probe or on other (explicit or background) assumptions or inferences that are no better off. Admittedly, in some of our more reflective moments, we can say to ourselves or to others something to this effect: *P* is a good reason for *Q*, so *Q* (assuming *P*). But, in such cases we either take a move from *P* to *Q* to be primitively good - being disposed to make or endorse it even without reflecting on it. This would be a case of explicitating a norm of reasoning implicitly honored all along. Or we indeed arrive at it via another piece of reasoning. In this case, however, it is arguable that the goodness of some inferential moves is not similarly up for grabs – being taken for granted and honored in practice.

### 3. The Cognitive Role of Reasons. The Force of the Better Reason

I also voiced some doubts regarding the tenability of M&S's account of prospective reasoning as a method of establishing reasoned beliefs. Recall that, for M&S, reasoning is a reflective process that requires, at some point, that one take *P* to be reason for *Q*. Yet, it is *not because of this fact* that one believes what one does. Rather, paying attention to reasons is a form of metacognitive control accompanying and/or rationalizing something that already happened.[161] Our folk-psychological intuitions may suggest otherwise. But, as scientists who know better, M&S don't buy it. They hold that, "to a large extent," it is a cognitive illusion on our part:

> The conscious self […] sees itself as making epistemic decisions to accept or reject conclusions, when in fact these decisions have been all but made at this sub-personal level. Reasoning as we consciously experience it, that is, as a series of conscious epistemic assessments and decisions, may well be, to a large extent, a cognitive illusion. (M&S, 2013, p. 376)

Perhaps person-level reflection is just the tip of the cognitive iceberg. Even so, it does not follow that it is a mere appendix. At the very least, it seems to be well within our person-level powers to zoom in on our intuitive responses and eventually reject or resist them. In this sense, we can self-consciously stand back, control, check and self-regulate our thinking and decision-making. And if an assessment of reasons plays this role, it is not clear why it should not also play a more "directive" role (in the sense of Boyle 2017): our thoughts and actions being guided by an assessment of reasons, our beliefs and actions being adjusted by reflecting critically on such assessments. It may well be that this rational capacity is not actualized as often as we might think (or as normative models would recommend). Relatedly, there is no implication that when we actualize this capacity, we do so mostly reliably (though I shall shortly argue, on conceptual grounds, for a baseline rationality). What matters is that we eventually have an access to it. That, arguably, transforms our kind of intelligence into sapience. From an evolutionary perspective, such a capacity (use or function thereof) would seem to be useful in the complex and intuitively often unpredictable environments that we

[161] Jonathan Haidt (2012) has propounded the same idea for the domain of moral reasoning.

inhabit and to a large extent actively construct or transform. This is quite compatible with taking social-communicative contexts and uses to be primary.

Our sensitivity and responsiveness to socially instituted and negotiated norms of "the better reason" plays a major role here. The primordial normative friction is intersubjective pressure and appraisal. What matters here is what *you*, *he* or *she* (relevant *others*) think(s) of my views or actions, accepting, probing, rebuking or rejecting them, etc. And *I* am the one who is called to the task (responsibility) of justifying my views or actions (hence myself) as reasonable. This is a *personal* level, because it is an *inter*personal level. Once this is cognitively and motivationally internalized, our *intra*personal reasoning is transformed, too. It then becomes possible for *me* to think of *my* own views or actions as better or worse justified, accepting, probing, rebuking or rejecting them, etc. And *I* am the one who is supposed to do something about it. It seems to me that to talk about our capacities to make up or change our minds by reasoning is in large part to talk about such feats. Admittedly, this would not be possible without – that is, it somehow supervenes on - something happening in our brains or nervous system. But to say that decisions are already taken at the sub-personal level seems to confound different levels of understanding.

The inferentialist account of reasoning as sensitive to the force of the better reason is of a piece with this. In addition, I shall further argue that it can motivate a somewhat more balanced picture of human rationality than the picture painted by M&S.

From the inferentialist perspective, there is baseline rationality for both interpersonal and individual reasoning. In our practices of reasoning certain reasoning moves count as primitively correct (if only in a given context of inquiry), determining what counts as a reason for (against) what (if only in that context). To count as a competent game-player, one must recognize and honor them as such. This sets the baseline of rationality relative to which deviations make sense. So if one repeatedly refuses to draw an inference from one's commitments to *P* and to *P, then Q* to *Q* (or fails to rebuke or correct someone who refuses to draw such inferences), we would not say that one is "in the conditional reasoning game." Likewise for basic material-inferential moves (though, in their case, the context and collateral assumptions play a

much larger role). One must to a considerable extent live up to such standards on pain of being treated as lacking the *know-how* to play the game in the first place.

To posit this baseline rationality is not to deny that we are prone to errors due to laziness, lack of metacognitive self-control, self-serving biases or absence of intersubjective check. Also, it does not surprise that we may fare better in this respect when our reasoning is embedded in the game of giving and asking for reasons, in which people aim to make their claims, commitments or actions acceptable, this being effectively cross-checked by fellow interlocutors holding different collateral information, thus being capable of adopting different perspectives that might prompt them to critique and probe their claims, etc. After all, one of the core claims of Brandomian inferentialism is that the norms governing rational thinking and acting get instituted through such interactions. From the developmental perspective, it is plausible to assume that our reasoning skills mature as we get increasingly (self-)aware that our performances take place within the practices governed by agent-neutral norms, including the recognition that our personal reasoning perspective is one among many and far from being privileged.[162] This makes it possible to grasp or simulate different reasoning perspectives, including knowing how to switch between the roles of proponents and interlocutors in the course of discussing an issue at hand with others.[163]

Importantly, this view balances to some extent the yawning asymmetry in M&S's account between biased/lazy proponents and unbiased/demanding interlocutors. For the social norms of rationality governing our games of giving and asking for reasons hardly say that good reasons are those supporting whatever we find believable. Accordingly, to come up with obviously self-serving or poorly thought out justifications or arguments (and to wait for others to point this out, eventually adjusting one's reasons) might not be the best strategy to pursue in the social game of giving and asking for reasons. Insofar as reason enables us (if unreliably) to take into account and respond to "the force of the better reason," we should be wary of neatly distinguishing its "productive" and "assessing" uses and saying that myside bias is its design feature

[162] For Brandom at least, objectivity consists in the permanent possibility of a difference between how one reasons and how one ought to reason. See Brandom (1994, p. 597). I discuss this in Chapter 6.

[163] Cf. Tomasello (2014).

when it produces reasons, whereas objectivity (impartiality) is its design feature when it assesses reasons. Rather than taking myside bias (etc.) to be a design feature of interactive reasoning, such reasoning may tend to mitigate the bias due to the cognitive division of labor, intersubjective check and sensitivity to norms of good reasoning.[164]

## 4. Why do We Play the Game of Giving and Asking for Reasons?

So far I have focused on the question of what it takes to reason in terms of the capacities for playing the social game of giving and asking for reasons. Inferentialist account of reasoning, in my view, offers in some respects a more satisfying answer to that question than M&S's metarepresentational account. But when it comes to the question *Why do we reason?*, inferentialists and fellow travelers have had little to say. Let me outline how inferentialists could address it, elaborating on the ideas from Chapter 1.

The inferentialist approach implies that a stage of human communicative practice is intelligible at which people reason from and to claims without yet explicitly conceptualizing inferential proprieties. This encourages a speculation about a stage of anthropogenesis at which our forebears produce certain kinds of verbal responses in certain kinds of situations. If there is a regularity to such responses, they can benefit from each other responses as reliable indicators of certain kinds of situations. And they can shape each other verbalizing dispositions in this direction by producing certain kinds of disapproving responses to verbal responses deviating from such (mutually) beneficial patterns. Moreover, as I intimated in Chapter 1, individual critters would also be pressed to coordinate their second-order responses (normative attitudes). This way, rudimentary proprieties of verbal behavior could be established in virtue of

[164] This is consistent with the alternative picture of the role of intuitions in reasoning sketched in Chapter 3.: in reasoning we perforce take certain things for granted, whether in the form of a background, ultimate premises or basic inferential moves. Such attitudes may be called *intuitive*. They may reflect social-normative constraints on *good reasoning* that might contribute to counterbalancing biased responses that interfere with good reasoning. Such sensitivities might be helpful also in individual ratiocination. This, again, suggests a somewhat more balanced picture of our person-level capacity to self-regulate our thinking and decision-making in light of reasons.

adopting and coordinating normative attitudes. At some point, then, our mythical forebears come to treat such utterances as appropriate or not depending not only on circumstances but also and on previous utterances similarly treated. Thus a more complex system of verbal behavior could emerge structured by rudimentary inferential and incompatibility relations. If an utterance of a speaker were assessed as conforming to an expected (enforced) pattern, practitioners would practically treat it as appropriate, relying on it as warranting or precluding other utterances on the part of the speaker as well as the audience. If not, they would dissent and treat it as incorrect, thereby putting the speaker under social pressure to correct himself - or else to vindicate his saying by providing reasons of sorts. In general, such disagreements generate coordination problems *vis-a-vis* the practice. And reasoned discourse offers a solution. This way, rudimentary activities and practices of asserting and giving and asking for reasons could get off the ground. Non-verbal performances might be treated in the same manner, if subject to similar expectations and attitudes regarding their proprieties. They can also be default accepted if fitting an expected pattern, or else probed, criticized, explained, justified, etc.

Even if our mythical forebears are not yet capable of reasoning in the fully-fledged, self-reflective sense, they can already discriminate and honor in their practice – i.e., in what they do, rather than in what they can state or otherwise consciously conceptualize – normative constraints. It is such constraints that establish the primordial, intersubjective space of reasons, being instituted, enforced and updated by interacting agents coordinating and calibrating their performances and normative attitudes. To skillfully navigate their way through the space, agents do not need to "reflect" on its underlying proprieties, wrapping them up into claimable content so as to make the properties themselves into the topic of the game of giving and asking for reasons. They rather exhibit a pre-reflective, practical-normative sense manifested in their normative attitudes of treating (responding to) something as appropriate or not without yet representing it as such. As a later development, ever more self-conscious forms of discourse (and of internalized reasoning) may emerge that make it possible to make explicit, negotiate, eventually revise proprieties or norms of reasoning.

I shall not further expand on this, as I have made attempts in this direction in Chapters 1 and 2. Suffice it to say that what I proposed there is consistent with the idea

that the impetus to the evolution of human reasoning was a pressure to develop justificatory and argumentative practices in increasingly hypersocial ancestral niches, in which proto-communication was already in place, fulfilling informative or other vital coordinating functions. Indeed, empirically-minded inferentialists may find congenial what M&S say about the effects and benefits of reasoning put to its justificatory uses:

> By giving reasons to explain and justify yourself, you do several things. You influence the way people read your mind, judge your behavior, and speak of you. You commit yourself by implicitly acknowledging the normative force of the reasons you invoke: you encourage others to expect your future behavior to be guided by similar reasons (and to hold you accountable if it is not). You also indicate that you are likely to evaluate the behavior of others by reasons similar to those you invoke to justify yourself. Finally, you engage in a conversation where others may accept your justifications, question them, and invoke reasons of their own, a conversation that should help you coordinate with them and from which shared norms may actually progressively emerge. (M&S, 2017, pp. 185–186)

Others have articulated similar or complementary views. For instance, Gregg Henriques' *Justification Hypothesis* states that increasingly social humans were compelled to develop justification filters enabling them to suppress motives for socially illegitimate or unacceptable behavior and produce justifications intended to legitimize their behavior, thereby rendering it socially acceptable.[165] Given this hypothesized function, the primary form of reasoning was social. Verbal reasoning was an *ur*-form, because justifications are originally cashed out in communicative rationalizations. In effect, people also became capable of reasoning privately, *in foro interno*, including dialogically (with a concrete or imagined addressee in mind).

That being said, there is a risk in pitting such social functions against cognitive functions of reasoning if we want to give a plausible naturalistic account of the norms of good reasoning that is consistent with its function. Consider M&S`s view that the

[165] Henriques (2011). So far as I know M&S do not refer to his research, though some of his ideas antedate theirs.

function of reasoning (in its argumentative uses) is to persuade interlocutors to accept one`s own view. The problem is that, intuitively, reasoning may function "well" in this sense, but be "bad" in the sense that the premises fail to provide good reasons for the conclusion. Consequently, it is unclear whether and how the norm of correct reasoning can be derived from the proposed function. Further, in so far as Mercier and Sperber submit that vigilant hearers are checking arguments for their coherence or strength – thereby pressing speakers to produce "better" arguments in this sense – they seem to presuppose cognitive desiderata (reliability and coherence) as constraints on the acceptability of something as counting in favor of something else. So a problem lurks here: it seems that norms of good reasoning reflect its function only if that function already reflects certain cognitive desiderata. If a plausible naturalistic account of the norms of good reasoning as reflecting its function is called for, this militates against purely social functions of reasoning.

The view sketched in this book may overcome the problem. Functionally, reasoning meets the general need of socially and cognitively interdependent creatures to coordinate and cognitively benefit from their up-an-running (if rudimentary) communicative practices (information sharing, pooling, learning, teaching) in the face of mis-coordination typified by disagreement or lack of agreement due to informational asymmetries. Given this function, and the value of social reasoning so conceived for individuals and groups, norms of good inference (including material) fit quite naturally into the picture as coordinators of such cognitive-communicative practices.

## 5. A Collectivist Alternative?

This story about why games of giving and asking for reasons could have emerged presupposes a cooperative framework of socially and cognitively interdependent creatures. But it is consistent with assuming that social and communicative practices of ancestral critters were *common goods* of sorts that featured salient non-cooperative incentives (hence recurring challenges) including deception or manipulation by means of verbal communication. One may argue that this is not likely to have been an endemic evolutionary problem.. In this vein, Michael Tomasello suggests that our ancestors were obligate cooperators who had much more incentive to be honest, trusting and cooperative than to be cheating, manipulative, vigilant and uncooperative.

[166] He proposes that exchanges of reasons could have "occurred regularly in collaborative activities" of joint or collective decision-making, bargaining or planning in which the interests of participants are mostly aligned, though they might have different information and views about what needs to be done, and how, to achieve an overarching goal that they share. To wit:

> Prototypically, we may imagine as an example collaborative partners — or even a council of elders— attempting to choose a course of action, given that they know together in common ground that multiple courses of action are possible. Given their equal power in their interdependent situation, they cannot just tell the other or others what to do; rather, they must suggest a possible course of action and back it up [...]. (Tomasello, 2014, p. 109)

Tomasello hypothesizes that reasoning was originally a cooperative venture of arriving at a reasonable belief, decision or plan. which requires awareness of *shared* or *common goals* of sorts – a form of what he calls *shared intentionality*. A corollary of this view is that reasoners did not aim to "win" the argument but rather to reach the best possible result vis-à-vis the shared goal. In a sense, if there is a "winner" or "beneficiary" at all, it is the group ("we") - and through it, all the parties who contribute to it. For:

> […] neither of us wants to convince the other if we are in fact wrong […] each would rather lose the argument and eat tonight than win the argument and go hungry. And so a key dimension of our cooperativeness is that we both have agreed ahead of time, implicitly, that we will go in the direction for which there are the "best" reasons. That is what being reasonable is all about. (Tomasello, 2014, p. 111)

Reasonability, Tomasello explains, is set by standards shared in a cultural common ground, mutually expected to be honored and eventually enforced upon those who do not live up to them.

---

[166] Tomasello (2014, chapter 4), Tomasello (2020). See also Norman (2016) and Smith and Wald (2020) for a similar critique.

> The norms of human reasoning are thus at least implicitly agreed upon in the community, and individuals provide reasons and justifications as ways of convincing "any rational person." (Tomasello 2014, p.112)

The idea is that rudimentary exchanges of reasons were originally cooperative and later evolved into collective practices regulated by communal normative standards of good reasoning. Moreover, since our evolved mindset is fine-tuned for cooperation and joint or collective action, Tomasello thinks that our reasoning is likely to display characteristic cooperative biases. One prediction is that we can expect better reasoning in cooperative contexts structured around a shared goal (including better performance than in adversarial social contexts). Findings like those of Moshman and Geil (1998) about the better performance of groups in Wason's selection task are pertinent in this respect, because participants were involved in a *group task* of figuring out the right solution. Further, Tomasello and coresearchers conducted experiments investigating the reasoning skills of children, which indicate a more objective argumentation of young children in specifically cooperative contexts (compared to competitive):

> […] when children aim at a 'good' solution, rather than 'winning', they approach the available evidence in a less biased way and produce more arguments […] and did not neglect or willfully withhold arguments when they were after the best solution for a common goal. Thus, cooperative situations, in which children have the joint goal of winning the game together, provide a more motivating context for argument production. (Domberg, et al., 2018, p. 75)

## 6. A Hybrid View

I sympathize with the idea that our socially and cognitively interdependent ancestors were not primarily motivated to exchange reasons in order to make others accept whatever view they wished, irrespectively of whether good reasons count in its favor (*pace* M&S). But Tomasello might go too far in the collectivist direction.[167] We may readily agree that reasoning could have facilitated collective deliberation. But we

[167] Cf. Tomasello (2014).

should be cautious with the claim that reasoning was *originally* and *primarily* designed to promote shared goals and so to facilitate in joint or collective ventures.

Tomasello might paint too rosy a picture of ourselves - or our ancestors, for that matter - assuming that humans are more cooperatively spirited creatures than might be warranted. I think that M&S rightly take into account that humans have divisive interests and that reasoning might accordingly have played an important role in their social propagation, negotiation or reconciliation. Think of socio-moral issues, where different parties might have conflicting perspectives - e.g., on how to divide valuable but scarce resources - and might bring to bear different standards (or ranking thereof) to justify their respective positions or proposals in the public arena. This is partly cooperative, to be sure – after all, they do not just enact the (primate) "right" of the stronger to take the largest share they are in a position to go away with. Still, people might not aim at some communal good in such situations, though they might aim to persuade others that it is in their (common) interest to accept their proposal. To me, it is not all that clear that such cases played a marginal role in human interaction and discourse. In addition, it is problematic to take the evidence from studies with young children as a window into the past. For contemporary learning environments may well be cooperative and supportive in ways that ancestral evolutionary environments might not have been.

Relatedly, in a social arena where individual interests and reputation are real factors, one might produce explanations or arguments to win over others for one's purposes, though this might not always be in their (best) interest. They will accordingly have an incentive to critically evaluate such attempts, precisely because it pays to be alert to this possibility. This in turn gives one an incentive to produce further claims as reasons to convince others that they might place trust in him. Eventually, they may end up accepting the original claim or proposal, and it may well turn out to be to the good of all parties. Still, the dynamics of such exchanges do not resemble those of a joint activity structured around some shared goal, if only because parties might have very different goals to begin with (even if the proponent's goal might be to win over others for some joint goal). Indeed, the very talk about the proponent staking a claim, an interlocutor probing or challenging it, and the proponent defending it suggests a dialectical or polemical element in reasoning. Further, one might produce justifications

to raise or defend one's social influence, standing, reputation, etc.[168] While all these phenomena arguably make sense only in a social structure that perforce involves some cooperative framework, they need not always reflect cooperative motives within a truly joint enterprise directed at some shared goal.

Perhaps, then, a somewhat eclectic account might be appealing after all. The core tenet of all social approaches is that reasoning was primarily fine-tuned for interpersonal discourse in the public *foro externo*, in social situations that might vary in the extent to which they are cooperative. Much depends here on one's preferred views, ideally disciplined by evidence about the likely evolution and stabilization of human cooperation in general and communication in particular and about the balance between trust and vigilance in relevant evolutionary environments. Here M&S and Tomasello provide two alternative speculative reconstructions that one might want to pit against each other. A better idea may be to take them to provide complementary accounts of various social uses of reasons in situations where doxastic (or practical) perspectives of socially and cognitively interdependent creatures are not coordinated.

My favorite view is that original forms of reasoning could have evolved with rudimentary exchanges of reasons, simply because they helped our ancestors to coordinate their verbal dispositions in a way that supported their up-and-running communicative practice and so furthered their cognitive interests. At this fundamental level, reasoning is a natural elaboration of mutually beneficial communicative practices. At this level, it was in the common interest of our ancestors to coordinate or else they could not benefit. Once in place, however, this practice could have been co-opted also for justification, persuasion, collective deliberation, etc. And for some of those social exchanges of reasons to have dividends for socially and cognitively interdependent critters, they certainly did not always need to act under the guise of the common good. At any rate, we may leave it to others to speculate which of those social uses of reasoning are more likely to have been exploited in relevant evolutionary environments.

[168] M&S (2017), Henriques (2011), Desalles (2007).

## 7. Conclusion

Inferentialism offers a distinctive philosophical elaboration of the idea that reasoning consists in competences to skillfully play the social game of giving and asking for reasons. Mercier and Sperber approach the phenomenon from naturalistic perspectives that have been underexplored by inferentialists and other language rationalists. And Tomasello provides yet another naturalistic elaboration of the core idea that reason is fundamentally a social-cognitive skill to make and assess ideas or decisions in light of reasons in a way that is sensitive to norms of good reasoning. I took advantage of this intersection of views and engaged them in a constructive dialogue. In this chapter I argued that the inferentialist approach yields in some respects a superior account of the kind of skills that are involved in taking part in basic games of giving and asking for reasons, which allows it to deal with the problems of cognitive oversophistication and vicious regress. It can also be developed to give a more balanced view of the cognitive function of person-level reasoning as sensitive to the normative force of the better reason. And if I am right, all this can be reconstructed in a promising naturalistic, evolutionary direction.

But much more remains to be said. Arguably, playing games of giving and asking for reasons is a characteristic feature of human sociality and sapience. On the one hand, they afford a brand new mode of conceptual thinking and reasoning not available antecedently or independently. So this can be interpreted as a transformative conception of human intelligence. On the other hand, such games and competences are not created *ex nihilo*. They build on more basic perceptual, cognitive and agential dispositions. So far, I have only scratched these important issues. I next address them.

# Part III

## *From Intersubjectivity To Objective Thought*

# Chapter 5

## *Shared World: Intersubjective Foundations*

### 1. Introduction

The animating idea of this book is that a hallmark of human rationality is the possession and exercise of competences to make, assess and respond to claims as moves in the space of reasons. Variations on this theme occur in the writings of philosophers such as Wilfrid Sellars, Donald Davidson, Michael Dummett, Robert Brandom, John McDowell and John Haugeland.[169] Subtle differences aside, the common ground is that this kind of rationality requires the setting of intersubjective interactions subject to standards of correct exercise of linguistic-conceptual abilities.

This view is not without appeal. Yet I am concerned that its proponents have incurred some explanatory debts that should be acknowledged and paid if the view is to be reflectively stable and credible. One such challenge is to come to terms with the question of what kind of minds it takes to establish, master and participate in social-normative practices in general and conceptual-linguistic practices in particular. These

[169] Compare the following classics: Sellars (1949), (1954), Davidson (1984), Dummett (1981), Brandom (1994), McDowell (1996), Haugeland (1998).

"language rationalists", as I shall call them[170], usually stress the central role of such practices with an eye towards conceptual-propositional modes of cognition or thought. This, I submit, is *in principle* compatible with the recognition of prelinguistic modes of cognition or intentional activity conceived of as a purposive and motivated coping with worldly affordances that is subject to voluntary control and flexibly sensitive to relevant information. Indeed, it seems obvious that intersubjective practices require prelinguistic forms of cognition and intentional activity, including intersubjectivity. Yet, language rationalists have had little to say about this. When they tackle the issue after all, they say things that are either not very illuminating or straightforwardly problematic.

Sometimes the idea is, simply, that we are born with basic perceptual and behavioral capacities that we share with animals; but then, somehow, our acquisition of language (and immersion into social-normative practices of culture more generally) transforms them into the uniquely human rational capacities. In this vein, John McDowell writes:

> Now it is not even clearly intelligible to suppose a creature might be born at home in the space of reasons. Human beings are not: they are born mere animals, and they are transformed into thinkers and intentional agents in the course of coming to maturity. (McDowell, 1996, p. 125)

But when it comes to illuminating this transformation, we are told little more than that:

> *Bildung* […] is a central element" and, in particular, "the learning of language" that contains "putatively rational linkages between concepts, putatively constitutive of the layout of the space of reasons." (Ibid., p. 125).

This, though, illuminates little. Plus, the talk about "being born as mere animals" glosses over the growing evidence that, in many respects, we are "special animals" from birth on - particularly predisposed for social intercourse.

[170] Following Bar-On (2013).

Robert Brandom also draws a rather sweeping demarcation line between sentient and sapient creatures.[171] The former are disposed - due to instincts, reflexes, conditioning or learning inducing associations and expectations - to reliably and differentially produce certain kinds of responses when confronted with certain kinds of stimuli. In this respect, they are like a piece of iron reliably differentially rusting in response to wetness, though they are capable of being in wakeful states. Sapient animals, on the other hand, are concept-mongering creatures whose thoughts and performances are sensitive and responsive to reasons and subject to norms. However, this glosses over different grades of behavioral and cognitive flexibility displayed by different species of sentient (intelligent) creatures. Brandom's bold conjecture that sentients can become sapients due to appropriate bootstrapping processes operating on reliable differential dispositions (including sanctioning) does not quite dispel the mystery.

This is a considerable explanatory debt incurred by language rationalists. To do better we need to more seriously address the question of what kind of minds are required to develop and take part in practices of reason. Here we are well advised to follow Sellars' call to engage the *manifest image* of ourselves as reason-sensitive creatures (*persons*) with the *scientific image* that portrays us as sociable beings with a natural, cultural and developmental history.[172]

Particularly promising in this respect is the naturalistic approach elaborated by the eminent psychologist Michael Tomasello (in a collaborative enterprise with other researchers, I should add).[173] Tomasello conceptually elaborates and empirically supports the hypothesis that human cognition and agency is uniquely social-cooperative due to evolved species-specific dispositions to "share intentionality." At both phylogenetic and ontogenetic scales, the development of *shared intentionality*

[171] Brandom (1994, chapter 1).

[172] Sellars (1963).

[173] Tomasello's most recent take on the phylogeny and ontogeny of human cooperative psychology are summarized in his trilogy Tomasello (2014), (2016), (2019). See also Tomasello (2008). His earlier views are presented in Tomasello (1999). Hereafter I repeatedly refer to Tomasello (2014) as follows: Tomasello (*NH*, p….).

proceeds in the context of specific forms of social interactions and literally transforms human cognitive and agential capacities. Tomasello's focus on ontogeny is especially suitable for my purposes. It addresses the central issue of how human intersubjective activities and practices, structured by psychological capacities of shared intentionality, shape human cognition and agency. It elaborates and applies the concepts and methods of experimental psychology with an eye to the traditional philosophical concerns with the intersubjective roots of objective, norm-guided thinking or reasoning. And its promise derives from the goal of providing a developmentally plausible account of how basic skills and interactions catalyze the development of more sophisticated skills, which in turn enable more sophisticated forms of thinking or reasoning across the board.

In this chapter, I first introduce Tomasello's framework and then discuss whether it really fulfills the promise of delivering a developmentally plausible account of how basic social-cognitive skills and interactions catalyze the development of more sophisticated skills up to objective representation, thinking or reasoning. In my view, Tomasello is right to focus us on the intersubjective infrastructure of mature practices of reason. However, I argue that if we want to shed a developmental light on them, we should be careful not to oversophisticate the requisite skills. My main concern is that Tomasello leans towards too demanding accounts of the cognitive and communicative activities of preverbal creatures in terms of rich mentalizing skills. This does not sit well with his goal of providing a developmentally plausible account of the basic psychological infrastructure. In a constructive vein, I discuss "intermediate" forms that may serve this purpose better. This prepares the ground for the last chapter, in which I will compare Tomasello's account of the roots of *objective thought* in intersubjective triangulation with the congenial views of two prominent language rationalists: Davison and Brandom.

## 2. The Shared Intentionality Hypothesis

Humans are creatures of Mother Nature, all right; but, in many respects, they are remarkable creatures. One strand in recent scientific theorizing suggests that our minds are "prepared" for tuning into and navigating socially interdependent and cultural ways of life and shaped by social interaction and culture, in turn. As social and later cultural evolution transformed the environments of our ancestors, individuals better

cognitively and motivationally disposed to coordinate, cooperate and socially learn adaptive skills and practices of their groups had a fitness advantage. This process could have produced an increase in sophistication that made possible more variable and complex skills and practices that selected for yet finer cognitive and motivational traits. Human ontogenetic pathways could have been shaped accordingly. From early on, indeed, infants are differentially sensitive (biased) to human social stimuli (faces, voices, gazes, smiles), being adept imitators and, somewhat later, also motivated collaborators. An unusually protracted period of dependency on caregivers affords them enough time to absorb adaptive competences required for such ways of life, due to innate or early developing sensibilities and cognitive skills specifically focused on social-cultural domains of life. In this general vein, it has been hypothesized that we are predisposed to develop early emerging psychological mechanisms that specifically dispose us to infer, grasp, store, internalize and enforce norms (primarily ways of doing things expected and promoted by our groups).[174]

Tomasello offers one of the best developed views along these lines. He starts with a broad account of *thinking* supposed to fit both human and non-human animals. According to it, a thinking organism is a self-regulating system capable of extracting, processing, storing and evaluating information from its environment and utilizing it to realize its goals by flexibly adjusting its behavioral strategies to (often novel) situations occurring in its changing habitat.[175] Compared to (efficient but limited) associative processes, thinking owes its (greater) flexibility to the following three core abilities:

- *Representing* – including in a decoupled regime (imagination, simulation, etc.) - relevant features of situations in a schematic-generalized format of a sort (due to discrimination of common features across a range of situations).

[174] Stich and Sripada (2006), Chudek et al. (2011), Rakoczy et al. (2008), Rakoczy and Schmidt (2013). Schmidt et al. (2012), Schmidt et al. (2016).

[175] Cf. *NH*, pp. 7-9. So organisms coping with a habitat that does not change (significantly) have no need to evolve flexible cognition or thinking in this sense, because rigid responses (produced by domain-general or domain-specific, modular sensorimotor and learning mechanisms) serve them well enough.

- *Making inferences* – including in a decoupled regime - transforming input representations into output representations according to causal, or intentional or even (proto-)logical relations.
- *Self-monitoring* and evaluating – including offline – one's behaviors vis-à-vis one's reference goals and, based on this, self-regulating one's choices or behavior (including making clever decisions ahead of action).

At this level of abstraction, non-human animals are thinkers, too – sometimes quite clever indeed. Still, there are different – possibly qualitatively different - grades of representing, inferencing and self-monitoring and self-regulation. Thus, primates (and specifically our closest cousins, great apes) may have evolved certain upgrades in these domains compared to cognitively-behaviorally less flexible animals. Humans, as higher primates, might have developed upgrades of primate upgrades. What kind of upgrades? Tomasello proposes two critical developments: from *individual intentionality* (the starting point: primate upgrades) to *joint intentionality* (the first crucial human upgrade) and from there to *collective intentionality* (the second human upgrade). Let me elaborate.

### *2.1 Apes' Upgrades: Individual Intentionality*

Tomasello empirically documents great apes' (shortly, apes) flexible cognitive skills of navigating and causally manipulating physical environments.[176] Apes map and memorize spatial layouts of their habitats as populated by permanent (including mobile) objects. They track and re-identify (including through barriers and occluders) objects as contiguous-continuant individual items and can discriminate precisely between quantities of up to 4 items and approximately between larger quantities. They assimilate objects (of interest) into categories, based on their common features. To this end, their cognitive devices may produce and consume *schematic representations* (e.g., image-like templates) for categories and even whole fact-like situations, which they may use in a decoupled regime (imagination). They are quite clever manipulators (sometimes manufacturers) of tools, even storing them for future use. This indicates

[176] References to many relevant experimental studies can be found in Tomasello (2014) and (2019). Here and elsewhere in this chapter I selectively refer to a couple of them that I consider especially representative.

some idea of causal relations (interventions) in the world,[177] offline imagination and planning skills. There is even some evidence of *proto-logical inferential abilities*. Some problem-solving behavior can be interpreted as if apes' train of thinking followed the pattern of a disjunctive syllogism: *p*: food is in this opaque box 1. or *q:* food is in that opaque box 2. (for they know that the experimenters put it in one box but do not know in which one); not *p* (since 1. has been shaken without emitting any sound); hence *q*.[178] Apes also manifest abilities of *executive regulation* and *self-monitoring*. To some extent at least, they can delay gratification in favor of a better but later reward, resist distractions and persist in their goal-directed activities until they attain their reference goals. Apes also appear to engage in on-line self-monitoring and evaluation of whether their actions match (or not) their goals, eventually correcting or adjusting their action (means-end) strategies. At the more cognitive level, then, they might do this in a decoupled regime: imaginatively trying out and evaluating different action-outcome contingencies and taking decision accordingly. On top of that, there is some (though controversial) evidence that apes monitor what they know or are ignorant of. For instance, if they do not know (or are not sure) how to solve a given (say, discrimination) task, they would not risk guessing and getting no reward at all, but would rather choose the exit option that guarantees them a less attractive reward.[179] And there is more.

---

[177] The main difference between great apes and other primates and higher mammals more generally seems to be that apes evolved much more developed skills to causally act on the world by using tools.

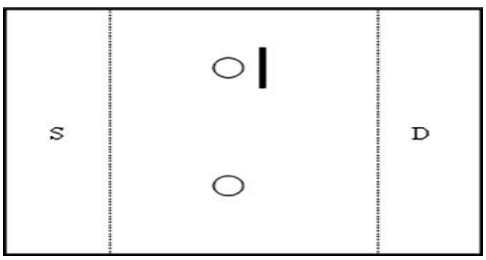
[178] Cf. Call (2006) and Bermúdez (2003), (2007). This does not require the notion of disjunction or negation operating on propositional contents (likely the prerogative of linguistic creatures). Apes may process situations in terms of polar opposites such as presence vs. absence of something. Another such capacity might be proto-conditional inference primarily based on understanding something about causal relations. But see Moody and Carey (2016) for different explanations.

[179] This may be interpreted as a case of animal *metacognition* (cognition about cognition). Searching for information is also taken to indicate metacognition in the absence of knowledge (partial information, uncertainty). Cf. Call and Carpenter (2001) and Call (2010). Perner (2012) gives a conceptually rigorous treatment and critique of this interpretation of the experimental evidence. For it is not clear what added value it is for chimps to (meta-)know that they know (do not know) something. Why not explain

This is enough for apes to count as intentional agents, hence thinkers. In addition, Tomasello maintains that apes also understand something about intentional agents and the social arena populated by such agents and their interactions. They have some basic grip on *intentional relations* between agents and the world: inferring what others are up to and likely to do based on understanding others as agents acting on the world so as to realize their goals, with a multitude of behavioral opportunities and access to information (what they can perceive or know) bearing on the prospects of goal-attainment.

For instance, apes seem to understand something about what others *see* (do not see), flexibly adjusting their action strategies in light of this information. Hare et al. (2000) had a dominant (D) and subordinate chimpanzee (S) compete over two pieces of food (F). In one critical condition, one piece of food was visible to both Ds and Ss and one was visible only to Ss. It turned out that Ss more often pursued F that Ds were not in a position to see. Ss displayed a tendency to adjust their action strategies (with the goal of obtaining F without risking conflict) as if anticipating Ds' likely behavior based on representing Ds' perceptual position vis-à-vis F.

*Figure 1. Competitive paradigm based on Hare et al. (2000). The condition in which subordinates preferentially approach food placed on their side of the occluder*




Hare et al. (2001) administered similar paradigms – this time with one piece of food - to test whether Ss would adjust their choices similarly depending on whether Ds *have (or have not) seen* F to be hidden behind the barrier. If so, this could indicate that they understand something about what others sort of *know* – at least in the sense of what they have seen, hence are acquainted with. And they found that Ss tended to pursue F when Ds had not seen F to be hidden behind the barrier but not when Ds had

behavior simply based on certain goals and first-order states of knowing or not knowing something? See also Carruthers (2008).

seen F to be hidden behind the barrier (moreover, if Ds were replaced by individuals who had not witnessed the hiding process at all, Ss did not hesitate to go for F). Indeed, Tomasello's favorite interpretation of these data is that chimpanzees bring to bear *mindreading* skills to infer and represent others' *goals* and *perceptions* and to understand some basic patterns linking them to one another and to behavior.[180]

Tomasello classifies these two sets of skills – of physical and social cognition, respectively - as comprising the repertoire of ape-like *individual intentionality*. He calls them *individual* because they primarily and mainly subserve the (instrumental) pursuit of individual goals. This applies equally to physical and social cognition. Apes' remarkable skills of social cognition dispose them to discriminate agency and basic intentional states connected to goal-directed behavior such as what others (and themselves) want (the goals they pursue) and what they can (cannot) see and thus know. They use such skills in anticipating, coordinating or manipulating one another's behavior. Just as they can manipulate physical tools and the environment when it comes to efficiently attaining their individual goals, they can also quite cleverly

**180** In Chapter 6 we shall see that Tomasello thinks that chimpanzees share these core mindreading skills (the so-called "perception-goal psychology") with human infants. This, though, is not yet a full-blown *representational theory of mind* involving understanding and attribution of belief-type mental states. According to Tomasello, we currently lack evidence that apes can interpret others in terms of (false) beliefs together with desires or intentions (the skills that normal children eventually develop at around age 4 or 5). Cf. Tomasello Call and (2008) and Call and Krupeyene (2019). Povinelli and Vonk (2004) and Penn et al. (2007) argue for a deflationary proposal: for all evidence shows, apes might be reasoning only about observable behavior. Heyes (2017), (2018) argues that apes (as well as human infants) may be "submentalizers." Butterfill and Apperly (2013) propose an intermediate account in terms of skills for tracking mental states without representing them as such. Again, both apes and infants may possess and exercise such skills to predict behavior of others. But only human children eventually develop canonical models of mind that represent beliefs (other mental states) as such. Butterfill (2020) elaborates this proposal in terms of distinct and independent (two or multiple) processes of mindreading (including automatic and non-automatic) that involve different (non-canonical and canonical) models of minds and agents, which may or may not incorporate beliefs (etc.). Non-canonical models enable early tracking of mental states and explain success in indirect (implicit) mindreading tasks. Canonical models need more time and social experience to develop and eventually enable success in direct (explicit) mindreading tasks.

manipulate their social environment, including by using others as social tools of sorts to attain their individual goals.

In the case of anthropoids, Tomasello thinks, the so-called *Machiavellian Intelligence Hypothesis* is onto something. Great apes had to adapt to hierarchical social environments involving both competitive and cooperative opportunities and motives vis-à-vis fitness-enhancing resources: food, safety, reproductive opportunities or status, including allies.[181] The former incentives were stronger and engendered feedback loops (cognitive arms races) that selected for ever better cognitive skills of "reading" – anticipating, influencing, including deceiving - conspecifics' minds and behavior, which were advantageous in intra-group competition over vital resources. The end-product was a kind of smart but individualistic thinking: an extension of instrumental thinking to social domains, utilized in reading and manipulating perceptions or knowledge of conspecifics and in anticipating and manipulating their behavior. It enabled apes to causally and intentionally structure situations in their socio-physical environment, and to infer what others are going to do based on what they are represented as perceiving or knowing.

### *2.2 What Makes Humans Human? The Cultural Intelligence Hypothesis*

Tomasello conjectures that, in primordial versions, we share the skills of individual intentionality with our great ape cousins through the common descent (the taxons *Panina* and *Hominina* splitted between 8-6 MYA). Without doubt, as we grow up and develop the core skills into a more complex and versatile toolkit, we become comparatively much more flexible, systematic, innovative, creative thinkers and reasoners across cognitive domains. Still, if we share primordial versions of the skills of individual intentionality with apes, they do not distinguish *us* from *them*. Not markedly anyway, still less qualitatively. By the same token, such primate upgrades won't explain our unique achievements: complex coordination and cooperation at different scales, elaborate cumulative material and symbolic cultures and linguistic practices.

[181] Cf. Humphrey (1976), Whiten and Byrne (1988), (1997).

From this perspective, the "million-dollar question" is: What upgrades on ape-like cognitive skills (motivations) are responsible for human sapience? Related issues include the following. At the phylogenetic level, why and how could they (or whole ontogenetic regimes generating them) have evolved?[182] At the ontogenetic level, at around what age do their first drafts emerge and how are they subsequently edited across ontogeny up to their full-blown (mature) versions? How much (or little) learning (teaching) and experience does their development require? What other capacities do they enable and are enabled by them? And what, if anything, does their ontogenetic development indicate about their evolutionary origins or functions? At the proximate-functional level, do they work as dedicated, domain-specific modules or, rather, as capacities that are integral to our cognitive operating across the board (domains)?

It is often assumed that to hit the "jackpot," one must specify some mental-cognitive capacity that is *basic* (grounds or explains other human-unique feats) and *separates* humans from non-humans (apes in particular).[183] In this spirit, it has often been suggested that *the* crucial upgrade that makes *the* difference is: e.g., a capacity to manufacture tools, abstract and flexible conceptual thinking and reasoning, language as a tool of communication and cognition, a capacity for culture, a capacity to establish and follow rules or norms, etc.[184] Tomasello's approach belongs to this tradition but with a distinctive twist. He thinks that language and other mentioned candidates themselves require naturalistic elucidation from the perspective of both phylogeny and

[182] Subquestions include the following. Are such upgrades products of biological evolution? If so, are they adaptations designed by natural selection or rather, results of drift, spandrels or exaptations? Alternatively, could they be adaptive products of coevolutionary feedback loops between biological and cultural evolution? Or are they products of cultural evolution/selection that are individually mastered via social interaction and learning supported by species-unique perceptual biases and species-wide, domain-general cognitive processes (likely adaptations produced by natural selection). Cf. Heyes (2018).

[183] See Glock (2012) for a discussion in the context of the debates about *anthropological difference*.

[184] Theorists favoring massively modular cognitive architectures also talk about human adaptations (including species-specific), but they are not as tempted to identify one adaptation as the crucial upgrade that grounds all major human upgrades to come, including language, culture, etc. Cf. Carruthers (2013).

ontogeny. According to him, any plausible elucidation of such feats should identify more basic capacities upon which their establishment, acquisition or actualization draws. Now, apes did not develop such feats (or not to the same extent) despite having similar core cognitive systems. So the sought for upgrade must be a capacity not contained in the ape-like individual intentionality that grounds and explains such high-level feats.

Tomasello is a co-proposer of the *Cultural Intelligence Hypothesis* put forward by Herrmann et al. (2007).[185] These researchers tested apes (chimpanzees and orangutans) and young children (2.5 years old) on a battery of tasks probing their understanding of object permanence/rotation, quantities, causal efficacy of tools, etc. They found that, in these "physical" domains, 2.5-year-olds are roughly on a par with great apes. By contrast, though apes possess the skills of social cognition, two-year-olds already outsmarted even adult apes in tasks testing:

- *social learning*: e.g., reproducing of a demonstrated instrumental solution of a simple but non-obvious problem (e.g., using a tool to retrieve an out-of-reach banana from a narrow tube), which presumably requires a capacity to parse and faithfully imitate a sequence of actions leading to an outcome.
- *mindreading*: e.g., understanding that actor tries, unsuccessfully, to achieve some outcome as his goal, which presumably requires sensitivity to and understanding goals (or simple intentions) of others (as agents) even when they are unfulfilled.
- *cooperative communication*: e.g., understanding that other's communicative signal indicates, say, the location of a desirable reward, which presumably requires sensitivity to and understanding of cooperative communication (intents) of others to share information.

Based on such comparative data, Herrmann and colleagues propose the following diagnosis:

[185] See also Tomasello and Hermann (2010).

> […] whereas primates in general have evolved sophisticated social-cognitive skills for competing and cooperating with conspecifics, humans have also evolved skills that enable them to actually create different cultural groups, each operating with a distinctive set of artifacts, symbols, and social practices and institutions. To function effectively in the cultural world into which they are born, human children simply must learn to use these artifacts and tools and to participate in these practices, which require some special social-cognitive skills of social learning, communication, and "theory of mind" […]. Humans' especially powerful skills of social-cultural cognition early in ontogeny thus serve as a kind of "bootstrap" for the distinctively complex development of human cognition in general. We may call this the cultural intelligence hypothesis. (Herrmann et al., 2007).[186]

Wobber and colleagues (2014) then added further support to this hypothesis. Whereas the first study compared young children with adult apes, this follow-up study compared groups of youngsters - children, chimpanzees and bonobos between 2 and 4 years - on a similar battery of tasks. Researchers investigated – and compared across species - the pace and pattern of the development of cognitive skills, and eventually their inter-relations. The main findings of Herrmann and colleagues were confirmed for young kids and great apes at around the second birthday: no significant difference in cognitive competence except in social domains (again, kids this young were

[186] The debate on this evolutionary level assumes that bigger brains (relative to body size) are good predictors of increased intelligence as indexed by cognitive and behavioral flexibility (including ecological success) and innovation. Higher primates are impressive in this respect. But humans are even much more impressive (in terms of brains three times bigger relative to body size and obvious increase in cognitive and behavioral flexibility, innovation etc.). The *General Intelligence Hypothesis* states that humans evolved comparatively bigger brains to support a greater "cognitive horsepower": flexible, general-purpose thinking and problem-solving across domains. Herrmann and colleagues beg to disagree: if that was true, we should not find pronounced between-species cognitive differences only in the social domains, but also in physical domains. But their comparative data indicate differences only in the former domains. Their preferred explanation is in the tradition of *social intelligence (brain) hypotheses*: major pressures driving the coevolution of primate brains and intelligence are specifically social- ecological. In the human case, we should also factor in cultural-ecological factors as especially crucial. For further discussion see Dunbar (1998b), Whiten et al. (2007), Laland (2018), Henrich (2016).

significantly better). Importantly, children between 2 and 4 years continued to rapidly and significantly improve their skills of social cognition along with their skills of physical cognition. In great apes, by marked contrast, there was no such significant improvement in cognitive competence in either domain. This study suggests that the development of the skills of social cognition is quite specific and pronounced in humans. And it seems to facilitate or bootstrap cognitive development in other domains. They conclude that the findings provide some support for this particular lemma of the hypothesis.

In a nutshell, then, the *Cultural Intelligence Hypothesis* proposes that humans are uniquely cognitively (and developmentally) adapted to learn from others and to cope with social and cultural domains. It is consistent with the fact that humans are eventually capable of much more sophisticated cognitive feats in both social and physical domains. Hermann and colleagues explicitly claim this in the passage quoted above, when they talk about the bootstrapping effect. The major point of Wobber and colleagues is that between 2 and 4 years there is significant cognitive progress in both physical and social domains, which is facilitated by early social-cognitive competences. The idea is that the crucial human upgrade is a unique social-cognitive capacity (or a suit of interrelated skills), which facilitates cognitive development and bootstraps our cognition to new levels across the board. Ontogenetically, it seems to be a precociously developing capacity. Phylogenetically, it seems to be critically implicated in the process of human social-cultural evolution.[187] At this juncture,

[187] Kern and Moll (2017) object that the social-cognitive development infuses human physical cognition from early on, making it unique in quality and hence discontinuous with the physical cognition of apes. Moll (2018) adduces some empirical support to this effect, which indicates that children's approach to physical tasks is shaped by a unique social bias toward learning generalizable skills or knowledge from competent others. But even if we grant Moll her interpretation of her findings, they pertain to 4-year-olds. This is consistent with the claim that between 2 and 4 years, social cognition interacts with and influences physical cognition (including via learning from others). It does nothing to undermine the claim that early emerging core skills of physical (as well as social) cognition – like those still in evidence at around two years - may be biologically based and shared with apes. The cultural intelligence hypothesis endorsed by Tomasello does not imply dissociation of the skills of social and physical cognition, respectively.

Herrmann, Wobber and colleagues defer to Tomasello's *Shared Intentionality Hypothesis*.[188]

### *2.3 Joint Intentionality*

According to this hypothesis, higher primates understand one another as "having" goals, along with experiences, perceptions and knowledge bearing on goal-directed behavior, but they don't seem to be interested in or capable of "sharing" attention, experiences, perceptions or knowledge, and hence forming shared goals. By contrast, we are highly motivated and capable of just those feats: we evolved a species-unique suit of adaptions that enable our uniquely cooperative - up to conventionalized and collectivized - forms of communication, thinking, reasoning, decision-making and acting.[189]

Studies of young children document their maturing abilities to engage with others in joint activities, willingness to help others irrespectively of external rewards (e.g., by handing over wanted objects) or to share information bearing on the task at hand (altruistic, informative pointing). According to Tomasello, the crucial developmental milestone occurs when infants' skills to *coordinate* and *share attention* come online. He talks about a "9 months revolution" that involves the emergence (at around 9 to 12 months) of infants' skills and motivations to coordinate attention with adult partners, to follow the gaze and pointing gestures of such partners, then to produce deictic gestures such as pointing for others, to understand their communicative (including informative) intent, and to detect the goal or intention on the part of interactants to look at the same object as infants attend to. In this transitional period infants begin to understand others as "subjects of experience" through engaging with them (typically parents or other adult caregivers) in *joint attentional and intentional activities*.

---

[188] The landmark paper is Tomasello et al. (2005).

[189] A weaker formulation might do. Primates may be capable of "sharing attention", "working together", etc., in some (properly operationalizable) sense of those terms. But they don't (seem to be motivated to) display (or only rarely) certain characteristic forms of "sharing" behavior, which already young children display.

In their second year, children begin to work together to achieve some goal – e.g., to obtain food rewards (remarkably, they are capable of peaceably sharing it at a "happy end"[190]). Thus, when they have an option to manipulate an apparatus so as to (a) provide food for themselves as well as for partners, or (b) only for themselves, they prefer (a) (and more than in the control condition without a social partner). Children not only actively assist adults with various tasks (handing adults out-of-reach objects, assisting adults to open doors when they cannot or their own hands are occupied, etc.), but they communicatively point to things in order to make adults aware of them – either to share experience or to inform them - without necessarily wanting to get access to them themselves. This testifies to their growing skills of coordinating attention with others around focal objects, events or situations, to understand that others have (subjective) perspectives of their own, and to understand others' intents and needs.

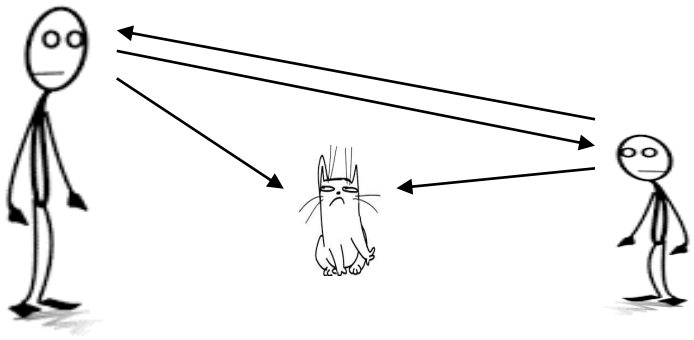
Children, moreover, actively seek and enjoy joint activities. Thus, when given an opportunity to obtain a reward on their own or through mutualistic collaboration, they would often choose collaboration (they also help others more in collaborative than in non-collaborative contexts). They are keen to play social games with adults, where playing the game with others is the end in itself, not just a means to secure external reward. Indeed, it has been shown that inducement by external rewards (praise of adults, rewards at the end of the activity) are not needed to motivate children to help others and can even be counter-productive in this respect. Children also show a rudimentary *sense of commitment* to joint activity. If an adult suddenly interrupts the up-and-running shared activity, they would communicatively attempt to re-engage him so as to renew it. And if they want to interrupt the activity themselves - because there is an opportunity to initiate a new, more attractive activity - they would communicate with adults as if asking for permission to leave. Children can postpone their gratification and wait (for consumption of the reward) until their partners are done with their part (and get their reward), even taking pains to help them when necessary.

As Tomasello analyzes this process at the proximate and developmental level, one-year-old children begin to understand the *dual-level structure* of joint intentional

[190] At around age 3 children begin to display a sense of fairness in sharing. If one child gets a lesser share, she would communicatively address the partner, and they would then be able to fix the problem.

activities. Children are aware that they attend to the same thing with their partner; and also that each of them attends to it from a (perceptual) perspective of his/her own. The idea is that a first grip on *perspective* is acquired in intersubjective triangulative activities structured by joint attention. A subject must grasp that one and the same item is simultaneously perceived from two different perspectives. It is not enough for one subject to attend to the same item differently at different moments. Nor is it enough for two subjects to attend to two different items simultaneously.[191] Rather, two subjects must co-attend to the same item simultaneously from different angles for them to develop a nascent grasp of perspectives. This grounds children's ability to represent situations not just in some kind of schematic-generalized cognitive format (as apes already do) but in a perspectival cognitive format, including the ability to take other perspectives and grasp that things can be represented or construed from two different perspectives, under different aspects.

*Figure 2. Triangulative situation structured by joint attention. Both subjects attending to the cat and inter-checking one another's attention (as a basis of mutual awareness)*



Joint attention and nascent awareness of different perspectives co-develop with the skills of cooperative communication. Such communication is structured by joint

[191] Here Tomasello draws on Davidson (2001). Davidson thinks that triangulation of verbal responses is required to understand that there are subjective perspectives on the objective world. For Tomasello, the most basic *triangulations* structured by joint attention are preverbal. Since other primates do not seem to share attention, they do not triangulate in this sense and so do not understand perspectives (at least not in the sense of differences in *how* subjects view the world). Two apes can mutually infer and track what the other sees or has seen. But their attentional states do not rightly intersect for awareness of perspectives to arise. I have more to say on triangulation and perspective taking in chapter 6.

attention. Communication, in turn, is the main way of establishing joint attention, situational common ground and shared goals. Early forms of cooperative communication include pointing to something (requestive, declarative, informative) and symbolic (iconic) pantomiming. Already the act of pointing to something, though non-iconic, might draw others' attention to focal objects or situations from a certain perspective, based on context-relevant information shared in common ground. Depending on the context, by looking at and pointing to an orange, one might construe it for the other - who takes it as such based on the situational common ground - as something to eat or as something to play with. This perspectivizing is made more explicit, flexible and detailed in symbolic gesturing, namely pantomiming. By the same token, joint attention is considered critical for learning what items pointing gestures or words indicate; there is evidence that prelinguistic children use gestures to indicate to others not just present but also absent objects (displaced reference). So we can discern in prelinguistic cooperative communication functional elements of both "topic" and "focus," which anticipate the subject-predicate segmentation of linguistic utterances.

Prelinguistic communication both enables and is bootstrapped by the development of linguistic representational-conceptual abilities. Although children in their second year already have some understanding of different perspectives on shared *foci,* they have real trouble to appreciate that two different construals (including labels) might apply to the same item at the same time. In other words, they seem to have trouble to appreciate that there might be different simultaneous perspectives on a given situation that may be in conflict with one another and each of them with the independent objective perspective (reality). This requires additional cognitive upgrades - including mastery of linguistic skills – that belong to the second developmental transition, to be reviewed shortly.

Joint attention – and the situational common ground established through it - is a *sine qua non* of joint goal-directed activities. In the case of infants, such activities are typically dyadic, *ad hoc* and short-lived. To establish and/or achieve together some mutually desired outcome interactants have to selectively co-attend to relevant features of the shared situation relevant to it. Children in their second year engage in playful interactions of this sort with adult partners. They even appear to be aware that each

interactant, themselves included, has a role of his/her own to fulfill (at its simplest: "now it's your turn") in order to attain that goal. Even if they have played just role A in a joint activity with a partner who played role B, they are capable of switching to B in the next round. So, they can understand and take others' (different) perspectives as well as others' (different) roles. Tomasello talks about having a *bird's-eye-view* of the dual-level structure of joint activity and a basic cognitive sense of *self-other equivalence* (role-reversibility). What is more, children can coordinate their role-based contributions and might assist one another in performing them (sharing information, helping).[192] Sometimes, they even frown upon (protest) misperformance on the part of their partner. This may indicate implicit sensitivity to standards of appropriate performance applying to whoever plays a given role in their joint activity. Since they form such expectations as involved (affected) parties, not as disengaged observers, they merely intimate a generic, agent-neutral normative stance. For a full-blown normative stance to develop, children have to be transformed into groupminded beings, undergoing the second major developmental transition.

In addition to enabling perspectival symbolic representations, the development of joint intentionality – especially in the context of cooperative communication – makes possible new forms of inference, self-monitoring and regulation. As Tomasello views it, participation in preverbal cooperative communication requires inferences about others' intentional states: what others want, know, intend, etc. And it requires more than this. After all, Tomasello thinks that apes' competitive forms of social cognition (mindreading) make use of such inferences, too. But he does not think that there is evidence that apes engage in cooperative communication, in which young children are already keen to engage (recall the object-choice paradigm). In addition, he contends, preverbal cooperative communication requires specifically *social-recursive inferences* to higher-order intentional states that embed other intentional states. In particular, addressee must figure out what communicator is up to: what he wants or intends addressee to think or do in a given context. Such inferences draw on the situational common ground between addressee and communicator (based on present or past-remembered joint attention) and the tacit presumption of relevance vis-

**192** Cf. *NH*, p. 38, 40.

à-vis that common ground. For instance, pointing to objects in plain view of both parties would be naturally interpreted by addresses as communicating something else – e.g., that the object can be used to solve some problem at hand - on pain of violating the tacit expectation of communicative cooperation and relevance. To facilitate this process in a cooperative manner, communicator might anticipate and simulate (from the second-personal perspective) such social-recursive inferences and tailor his communicative act accordingly.

This, finally, gestures to the aspect of self-monitoring and regulation. During this period of their social-cognitive development, children start to self-monitor and regulate their intentional activities second-personally: that is, taking into account perspectives and expectations of "particular others," who are typically their actual (or potential) partners in interaction (caregivers, other adults). They not only recognize self-other equivalence but see and assess themselves through the eyes of others in so far as they treat themselves and others to form some kind of "we"-agency. An important expression of this is an incipient sense of commitment and responsibility to others, as well as nascent appreciation of second-personal protests as "deserved" (from this point of view).[193]

Now, none of these remarkable capacities has been observed or experimentally confirmed (or they are comparatively rare) in anthropoids.[194] Or so at least Tomasello

[193] Tomasello's view is that children's first grip on *social-normative* expectations, standards and attitudes presupposes a prior (if implicit) understanding of oneself and others as *intentional agents* and of *instrumental normativity* already at the level of individual agency (this kind of action is an appropriate means to achieve this kind of goal). It then develops in the intersubjective, specifically second-personal setting of joint intentional activities, shared goals and roles from which protonormative expectations, standards or attitudes coordinating such activities are supposed to derive. Generic, agent-neutral normative expectations, standards and attitudes develop from this basis later on.

**[194]** Apes sometimes help humans and conspecifics by handing them out-of-reach objects. Cf. Warneken et al. (2006). Control conditions show that they are prepared to help even without external incentives (rewards). But Tomasello notes that these are cases of helping in non-competitive contexts, where costs are typically low (though, in some cases, the level of effort is more significant). In some helping tasks, apes would actively help conspecifics to access food by opening for them the room where food is placed that partners are not in a position to open themselves (more than in the control condition when the

submits.[195] He calls them the skills and motivations of *joint intentionality*, regarding them uniquely human. Joint intentionality *transforms* all the core aspects of thinking (basically, of individual intentionality) for the first time. Summing up, its major achievements are the capacities to:

- jointly attend to focal objects, events or situations (or features thereof);
- engage in collaborative activities structured by joint attention (affording the situational common ground) and shared goals, forming a sort of *we*-agency in which both "I" and "You" participate together;
- understand, from the "bird's-eye-view," the dual-level structure of such activities as involving different perspectives on the same situation jointly attended to and acted upon, as well as different roles and corresponding role-based standards of appropriate performance; understand basic self-other equivalence and take (imagine, simulate) one another's perspective and role;
- engage in (primarily) cooperative communication by using perspectival, symbolic, structured representations (basic "topic-focus" articulation) with displaced reference and drawing on situational common ground, presumption of contextual relevance and second-personal social-recursive inferences;
- self-monitor, self-evaluate or self-regulate from the social, second-personal perspective.

### *2.4 Scaling-up: Collective Intentionality*

Tomasello's big picture is that joint intentionality is a prerequisite for all other major upgrades to come: basically, for the abilities and motivations to identify with one's cultural groups and conform to their ways of doing things by absorbing ever more

---

partner is not trying to get into the room or when there is no food in it). Yet, this occurs when helpers cannot access food themselves and so the context is non-competitive.

[195] This is a point of controversy. Cf. Leavens (2011), Boesch (2012) or de Waal (2016) for views according to which apes are (cognitively) capable of (some) such feats, but their form of life is very different and so opportunities and/or motivation to engage in such activities is on a different scale than in humans.

sophisticated socio-cultural skills or knowledge not only through observation and imitation but also via guided learning or active teaching by adult models. Owing to them, children can develop into fully-fledged linguistic, normatively self-governing members of a social-cultural body capable of giving and asking for reasons (*persons*). It is important to review also the main aspects of this second transition – from joint intentionality to *collective intentionality*. This bears on the topical issue of whether and how social-cultural normative practices shape human cognitive and agential capacities.

Recall, to begin with, that one-year-old children can establish a situational common ground (shared experience, knowledge) with particular others and draw upon it in *ad hoc* collaborative activities towards shared goals. However, roughly at around their third birthday, second-personal capacities are scaled-up to the collective level and enable children to partake in a *cultural common-ground* that transcends the limits of joint attention: shared knowledge, ways of doing things or norms regulating them that are public in the sense of being widely known to be widely known. The child is now both motivated and disposed to recognize, master and display such cultural group markers.

One crucial part of this process of becoming a cultural creature (eventually, person) is that the child has uniquely developed skills of faithful imitation (including of specific steps leading to specific outcomes[196]) enabling it to conform to its cultural group's ways of doing things (before the child used those skills to mimic partners in shared emotional and intentional activities).[197] Caregivers and other adult (competent)

[196] (*True*) *imitation*, in this specific sense, is often distinguished from *emulation*, understood as learning (through observation of others) to bring about some outcome without mimicking the specific procedures (actions) used by the observed model (Tennie et al. 2006). There is evidence that apes can imitate, not just emulate (Whiten et al. 2009). This has some implications for the debate about whether apes can elaborate and sustain local *cultural* traditions worth that name, for which conformity based on imitation (and not just emulation) seems to be required. Yet, already young children seem to be way ahead in this respect. This is, in part, indicative of the great difference between human and ape *cultures*.

[197] The so-called *overimitation* of instrumentally redundant procedures – which children display - can be interpreted as serving this cause. More precisely, children tend to faithfully mimic the actions of a model even when these actions are irrelevant for solving the task at hand. So far, overimitation has not

models interfere in and scaffold this process of social learning by providing examples, feedback and other forms of guidance. More active forms of learning/teaching then take advantage of cooperative communication between the child and the model (teacher), for which the child seems to be uniquely prepared. Children are particularly sensitive to attention-grabbers and "pedagogical" cues that signal tutors' intents to focus them on certain features of the situation. For example, the tutor might say "Look, Teddy," pointing at a certain event. And he might then use a "generic" talk to drive the point (lesson) home: "This is how this kind of thing is done." This helps the child to understand that "how" does not apply just to the given situation but transfers to others.[198]

Another crucial part of the process is that the child scales-up to the collective level already developed skills of cooperative communication so as to master cultural or communal conventions of constructing and using increasingly complex expressions "the way we do around here." Systematically constructed expressions provide the child with a uniquely productive system of arbitrary symbolic representations, including those that are fully *propositional* and richly *inferentially* interrelated. The child is immersed in a culturally inherited system of conventional representations – the conceptual common ground - that affords much more flexible and expressively powerful system of communication about and perspectivization of the shared world. It also boosts and facilitates social institution of realities that depend for their existence on (implicit or explicit) collective recognition and agreement.[199]

---

been experimentally documented in apes (nor, for that matter, in any other species). See Whiten et al. (2009).

[198] Csibra and Gergely (2009) have developed an influential account of the so-called *natural pedagogy* that capitalizes on this.

[199] Tomasello is influenced by Searle's (1995, 2010) ideas on the construction of social reality as based on collective acceptance. In particular, the child starts to understand instituted *status functions* with deontic powers, but the onset of such capacities is earlier. Two-year-olds already engage in pretend play activities – e.g., talking into a banana as if it were a mobile - that trade in assigning a sort of status function to objects that differ from the true nature or identity of those objects. This form of decoupling might have some implications for their later understanding of appearance/reality distinction. Cf. Rakoczy (2006).

This is a major step toward producing and consuming *objective representations*. It develops hand in hand with children's enculturation and growing understanding of their groups' ways of doing things as embodying something like *objective perspectives* and related (agent-neutral) *normative standards*: over and above particular perspectives of individual agents, including those coordinated within preverbal joint activities. Once children understand something about (including simulating or taking) others' different perspectives on the shared world, they later begin to appreciate such things as that others' perspectives may conflict with their own and that both cannot be correct perspectives on the same shared world. This culturally and linguistically mediated process catalyzes the development of a fully-fledged notion of the difference between appearance and reality or objectively correct and incorrect representations of the world (including false belief). Indeed, children reliably pass standard appearance-reality and false-belief tasks somewhere between four and five years old.[200]

Hand in hand with becoming proficient users of language, children eventually master the art of drawing *self-reflective inferences* up to being able to make, justify and assess one another's claims (or actions) in light of collectively accepted standards of what is a (good) reason for (against) what. This specific part of Tomasello's doctrine has been critically scrutinized in Chapter 4. For record, he proposes that reasoning is primarily and originally a public and cooperative process, which, when internalized, becomes an instrument of individual ratiocination. It evolved in the context of collective planning or decision-making structured around shared goals of sorts. This may have shaped ontogenetic pathways. Indeed, young children are already eager to engage in reasoning and are particularly adept at it in cooperative contexts.

Finally, the second-personal mode of self-monitoring and regulating their intentional activities is scaled-up to abilities and motivations to self-monitor and self-govern oneself from the objective or impartial collective perspective of their cultural

[200] In addition, there is some evidence that facility with and training in linguistic constructions, especially "that"-complements perspective-shifting discourse, and facilitates and predicts their understanding of and success in such tasks Cf. De Villiers and De Villiers (2000), Hale and Tager-Flusberg (2003), Lohmann and Tomasello (2003). More on this in Chapter 6.

group and its norms ("normative self-governance"). This presupposes abilities to take a *normative stance*. A number of experiments conducted in Tomasello's Leipzig lab document that, at around their third birthday, children infer rules or norms of game-like conventional activities as well as of instrumental activities. For instance, children had first seen a model perform an arbitrary activity in a certain way, whilst saying "This is *daxing*." Children then saw a puppet perform an activity that either matched or failed to match the original activity of the model, whilst saying "This is daxing." Revealingly, children tended to protest when the puppet's activity failed to match the original activity. More generally, there is evidence that, in the role of third-parties, children recognize and protest aberrant performances, often using normative-generic idioms to the effect that it's not the way to do this kind of thing. This indicates sensitivity to normative standards to live up to – how one is supposed to perform - because they sort of enforce them. Indeed, children seem to infer normative standards governing such activities even without being explicitly instructed or without being given any pedagogical and verbal cues. They not only enforce norms when registering aberrant performances of others but they transmit them to newcomers. In all, children at around this age can adopt an *impersonal normative stance*: enforcing and enacting normative standards that generalize across situations and agents as something to live up to.[201]

Once again, then, collective intentionality transforms human cognition and agency for the second time in all three core aspects of thinking: representation, inference, self-monitoring and regulation. Its major achievements are the capacities to:

[201] The idea is that being a groupminded agent requires understanding something about collective-cooperative action: from its goals (roles) collective-level (generic, impersonal) normative expectations, standards and attitudes derive. Just as, at the joint level, protonormative expectations, standards and attitudes derive from shared goals and roles. Indeed, the former presupposes the latter. Findings from other studies indicate that children at around this age understand something about context-sensitivity of norms. Children at this age are also selective when it comes to whom to learn proper ways of doing things from: they prefer adults to peers and reliable to unreliable models. Still other studies indicate that children are sensitive to at least some differences between conventional (arbitrary) norms supposed to apply just to those agents (members of a particular group) who accept them and norms (e.g., against harming) that apply more widely: across groups, including in their scope also those who might not accept them. For up-to-date reviews of relevant studies see Schmidt and Rakoczy (2018), (2019).

- identify with one's (cultural) community (as a permanent collaborative "we"-agency), conform to or otherwise absorb (via social learning) its ways of doing things and coordinate and cooperate with cultural peers at the group-level;
- understand and take collective perspective (generalized, impersonal, with an objective purport) of the cultural "we," including grasping, enacting and enforcing its general, agent-neutral normative standards (taking a genuine normative stance);
- produce and consume conventional, systematically structured representations (including abstract concepts) that are propositional, richly inferentially (including logically) articulated, and understanding them as representing the shared world (situations, events) in a way that can be objectively correct or incorrect;
- engage in reflective forms of (primarily external-cooperative, secondarily internalized-individual) reasoning: producing or assessing reasons in ways sensitive to collectively negotiated and accepted standards of reasonability;
- self-monitor, self-evaluate or self-regulate through the collective perspective and in light of normative standards.

## 3. A Delicate Balance

The *Shared Intentionality Framework* derives much of its interest from the fact that it forges an intimate link between human-unique sociality and human-unique cognition. Adopting the social-developmental perspective, it aims to illuminate how higher cognitive skills of representation, communication, inference or self-regulation develop (or evolve) from more basic skills as children (or our hominin ancestors) participate in specific forms of social interaction. A psychologically plausible account of primordial social interactions thus should not attribute to agents sophisticated skills that are likely products – rather than building blocks - of the developmental process. For example, ample evidence from developmental studies indicates that it takes some time for children to understand and attribute propositional psychological states such as beliefs, desires, intentions, their direction of fit, conditions of satisfaction and relation to each other. Plus, there is evidence that this folk-psychological competence co-develops with

linguistic skills. But then, accounts of primordial social interactions presupposing such abilities are implausible. This also applies to rational capacities of objective-propositional thinking that, according to Tomasello, require a grasp of the difference between subjective and objective perspective on the independent world out there (that the former may fail to match the latter). In fact, understanding beliefs (as something that is essentially apt to be true or false) and the capacity for objective-propositional thinking are two sides of the same coin by Tomasello's lights. The same logic applies to reflective inferences that are sensitive to norms of "good reason" linking propositional thoughts as standing in relations of rational support, coherence, and the like.

The social-developmental approach thus calls for a *bootstrapping approach*. It starts with primordial social interactions that require only basic social-cognitive skills. It then illuminates how competence with such interactions due to such skills catalyzes the development (evolution) of more elaborate social-cognitive skills. Those in turn enable more complex forms of social interaction, competence in which may catalyze the development of ever more sophisticated skills. For instance, the skills required for preconventional coordination or prelinguistic communication are more basic than the skills required for understanding and conforming to conventions and for linguistic communication.

This approach is inconsistent with *extreme lingualism*: namely the view that only agents with a command of a natural-public language can be credited with cognition or thinking (worth that name). By the same token, it is inconsistent with *extreme social pragmatism*: the view that only agents competent in social-normative practices can be attributed cognition and thinking (norm-governed linguistic practices usually playing the crucial role). The common challenge facing these views has the following structure:

1. It is maintained that all thought (cognition) requires competence with language (or with social-normative practices).
2. But (acquisition and/or exercise of) competence with language (social-normative practices) is a feat that itself requires some kind of thought (cognition).
3. As that kind of cognition (thought) grounds language (or social-normative

practices), it must not itself require competence with language (or with social-normative practices).

4. So, it cannot be the case that *all* thought (cognition) requires competence with language (or with social-normative practices).

Tomasello endorses this line of reasoning and promises to describe the kind of cognition or thought that (3) and (4) talk about. The skills of joint intentionally are his best bet. Yet, I am concerned that his psychological descriptions of such skills and activities require sophisticated mentalizing feats that cannot be taken for granted but call for the developmental treatment themselves. In particular, he tends to explain attentional, intentional and communicative activities in terms of abilities to represent/attribute and recursively embed representations of mental states in higher-order mental states. The problem is that it is far from clear what (if anything) warrants attribution of such skills to preverbal infants (or hominins). Here Tomasello is in danger of assuming that, in absence of language, there is an excess of sophisticated cognition for which there is little evidence. At root, the challenge has the following structure:

1. On some accounts, a certain kind of social activity A requires a certain social-cognitive skill S.
2. There is both evidence and social-developmental rationale to suppose that prelinguistic (precultural) human agents are already capable of engaging in A.
3. But there is no or little (uncontroversial) evidence that such agents possess S, whereas there is some evidence that S depends on the acquisition of language.
4. So, accounts maintaining that S requires A are implausible from the social-developmental perspective.

In the following I bring to bear this challenge to Tomasello's accounts of joint attention, joint action and cooperative communication, respectively, with tentative suggestions of how to do better. This line of criticism, I think, is relevant to the main issue at hand. Tomasello often draws on influential philosophical accounts of joint action or cooperative communication - especially those in the tradition of Michael

Bratman (shared-cooperative activity) and Paul Grice (intentional communication).[202] Those accounts, however, presuppose the kind of folk-psychological and/or reasoning skills that Tomasello's developmental approach should illuminate, rather than take for granted. Indeed, this cognitive wherewithal may be the prerogative of rational-sapient creatures participating in social-normative practices, and in discursive practices in particular.

## 4. Ad Joint Attention

According to Tomasello, joint attention structures coordinated action toward shared goals, referential acts and cooperative communication more generally, and learning of skills and words from others. It is the core social-cognitive skill of joint intentionality. It innervates human cooperative and cultural ways of life: social-normative practices, language and social realities that depend on them. It is the child's initial window into the intersubjective, shared world, which kicks off the developmental process that enables ever more complex understanding of both social and physical reality. It is therefore important to focus on both behavioral and cognitive aspects of its primordial forms.

Tomasello himself offers the following account of joint attentional activities of the sort in which preverbal children engage - typically with caregivers (emphasis is mine):

> […] the engagement here is not only triadic—the infant and adult are sharing attention to an external entity or situation—but, in addition, it has a kind of recursive social structure. *The infant is attending not only to the adult's attention to the object, but also to the adult's attention to her attention to the object, and to the adult's attention to her attention to the adult's attention to the object, and so on*. It is not that the infant engages in this kind of recursive thinking explicitly, but that *the underlying structure of joint attention means that they both know together that they both are attending to the same thing*. They are sharing experience. (Tomasello, 2019, p. 56)

[202] Bratman (1992), (1993), (2014), Grice (1989).

The idea is that a plausible account of joint attention must do justice to a basic phenomenological datum: co-attenders are somehow mutually aware (know) that they are attending to the same thing. To drive the point home, imagine two subjects concurrently staring at the same stoplight. This might happen without their attention being *shared*. Even if each of them notices the focus of the other's attention, they may not be attending to the stoplight *together*. Tomasello suggests that what is missing from such cases (merely parallel attention) is a *recursive social structure* (henceforth RSS).

In the following I take it for granted that joint attentional activities between infants and caregivers display characteristic mutuality that a plausible psychological account must capture. Properly understood, *attentional loops* specified by RSS might be key factors in this. The question to address is what kind of psychological skills it requires.

A classical account by Bakeman and Adamson (1984) characterizes joint attention as involving a *triadic interaction*, on the part of X and Y, to coordinate their attention to an object O of interest to each of them. What kind of triadic interaction? In the paradigmatic case of visual joint attention, X and Y follow into the gaze of each other and display alternating looks back and forth between O and each other's faces or eyes. This is characteristically accompanied by attention grabbing, soliciting or directing communicative displays: smiles, points, vocalization or simple speech. In fact, pointing or showing things to a partner are communicative activities often considered paradigmatic cases of joint attentional activities between children and caregivers.

*Prima facie* at least, this kind of interactive-communicative behavior seems enough to establish the proverbial "meeting of minds" between subjects so they can share experience about focal items. Indeed, it is absent from cases of disjoint (merely parallel) attention. In view of this, what's the point of invoking something like RSS? To begin with, what does it take for the infant to "attend to the adult's attention to the object"? What kind of insight (if any) into attentional-intentional behavior does it presuppose? Is some capacity for recursive mindreading (higher-order intentionality) required for the infant and adult to *both know together* that they are both attending to the same object?

With respect to these topical issues, Tomasello (along with fellow researchers) is often classified as championing a "rich" (in contrast to "lean") account of joint attentional activities in terms of mentalizing abilities:

> (a) to understand something about others as agents with simple attentional-perceptual and intentional (in the sense of goal-directed) mental states; and
>
> (b) to entertain higher-order intentional states that recur back to attentional states of others.[203]

Now, mature humans possess the skills specified in (a) and (b). Indeed, it may well be that they recruit them to scaffold infants by perceptively directing and aligning their and infants' attention.[204] However, applied to infants, this rich account is doubly problematic.

The first issue concerns how to interpret (a). Varied evidence indicates that, between 6-9 months, infants adopt a rudimentary *intentional stance*: expecting agents to behave in systematic/efficient ways toward external objects in their perceptual field (e.g., choosing the shortest available route to reward). When such expectations are violated, they would display surprise (e.g., looking longer at events contrary to their expectations).[205] Yet, it is another matter to interpret – and quite possibly overinterpret - this in terms of infants' understanding of agents with internally represented goal-states and experiential states presenting their (visual) perspective on worldly items. Applied to the case of visual joint attention, the basic datum is that Y's attention to O is the target of X's attention and *vice versa*. This is a matter of X's (the infant) following Y's gaze direction whose terminus is O, and the tracked link between them

---

[203] This seems to be implied in formulations of Tomasello (and fellow theorists) such as the following: in addition to X and Y each seeing/attending to O, X and Y must both know/see/recognize that they both are seeing/attending to O, X and Y must both know/see/recognize that they both know/see/recognize this, and so on.

[204] It is less clear that adults rely on recursive mentalizing in mundane shared attentional activities with peers. They may use such skills in situations in which something goes wrong in the otherwise smooth bout of joint attentional (often communicative) interaction and so needs to be "diagnosed" and "repaired."

[205] Cf. Csibra and Gergely (1998), Woodward et al. (2001), Tomasello et al. (2005).

is in X's own perceptual field. This may be interpreted in terms of X's incipient insight into Y's *attentional-intentional behavior* in that X understands it as selectively directed at and differentially responsive to (and, in this sense, as sort of "about") external targets. If, for instance, X follows Y's direction of gaze but finds nothing over there, X would look back to Y's face (or eyes) and follow Y's line of regard again - until, eventually, X would visually encounter O (perhaps checking back with Y for a reassuring look or smile). The question is: Does this require an insight into seeing/attention as an inner experiential take on the external target? That would seem to require:

> (i) inferring and attributing to others inner states that might not be directly expressed in their behavior (so behavior can be predicted based on them),
>
> (ii) understanding that others perceive the same thing under a different aspect.[206]

9-12-month-old infants already engage in joint attentional activities of sorts. Yet, so far as I know, there is little evidence that infants at this age are capable of (i) or (ii). So, in so far as (a) is interpreted as requiring such mentalizing skills, it seems to stand on shaky ground. For all we have evidence for, infants may well register and track what others *experience* (or have experienced) in the sense of what they are (or have been) *engaged* with.[207] They seem capable of this early on, even as onlookers not actively engaged with others in triadic activities. This is consistent with their being particularly sensitive to and capable of keeping tabs on others "experiences" (in this attenuated sense) within shared attentional activities with others.[208] It is also consistent with the hypothesis that infants' participation in bouts of joint attention at the end of the first year is a facilitator of the subsequent development of mentalizing skills.[209]

---

[206] See also Perner (1991).

[207] *Inter alia*, the growing research industry using "indirect" or "non-verbal" measures (such as looking times or anticipatory looking) can be interpreted as providing evidence of at least these sensitivities and tracking abilities (rather than of understanding (false) beliefs, as some researchers interpret it). See Doherty (2008) or Moll and Kadipasaoglu (2013).

[208] See Moll et al. (2007), Moll et al. (2008).

[209] Perhaps infants have an *implicit* (preconceptual) grasp of such mental states; or perhaps they *track* such states without representing them as such. The question is what implicit (as opposed to explicit)

What is Tomasello's take on this issue? On the one hand, he often talks about infants' nascent understanding of others as intentional agents with internal goals and experiences, whose onset traces back to triadic joint attentional activities. Here is one representative passage:

> [...] apes and young children both […] understand: the actor' s goal as an internal representation of the state of the world she wishes to bring about; that the content of the other's perception is something potentially different from their own; that the actor chooses an action to pursue a goal "rationally" in the sense that they consider the actor's reasons for doing what he is doing. (Tomasello, 2018, p. 47 – 48)

This may suggest that he unqualifiedly endorses the rich mentalistic construal of (a) under fire.

For the sake of charity, I should mention that Tomasello's considered view is more nuanced. Consistent with his developmental approach, he elsewhere suggests that even though infants in the first year can already adopt a basic intentional stance, their initial grasp of attentional-intentional behavior is in many aspects fairly limited.[210] In particular, they have yet to develop their understanding of perspectival aspects. This process is catalyzed through early joint attentional behaviors. To wit (emphasis added):

> In the months leading up to their first birthdays, infants share attention to things with others, but, arguably, *do not consider at all that they and the other person perceive it differently*. Through a developmental process—perhaps involving

grasp or tracking (as opposed to representing) amounts to. I will have more to say about this in the next section.

[210] At around 9 months, infants display some grasp that others act in a goal-directed manner based on what they witness (or have witnessed). Witnessing can well be interpreted in the attenuated sense of "what others engage with." This grasp is explained as the product of the developmental pathway of individual intentionality, which we share with apes, but which emerges sooner in humans than in apes. Crucially, at this juncture joint attentional activities and skills also emerge in children. This is explained as the intersection of the first pathway with the human-unique developmental pathway producing capacities for "sharing intentionality" (primarily emotional sharing within infant-caregiver protoconversations). Compare Tomasello (2019).

> infants' comprehension of adults' communicative acts designed to draw the focus to various aspects and parts of the shared referent—their sharing of attention is enriched to include various perspectives on the shared focus. (Moll et al., 2013, p. 653)

On this view, communicative activities orchestrated through joint attention are facilitators because they require alignment and later also coordination of attentional and informational perspectives on the shared-focal object/situation. Attempts at coordination of attention already manifest one's goal to draw (re-engage) one's partner's attention to something that one is attending to but one's partner is not. To so coordinate two attentional foci – one's own and one's partner's – one has to somehow take account of both of them and the relation between them. By contrast, if one merely registers (or recalls) what others visually experience/engage with (or have experienced), one does not need to take account of what one experiences oneself. Further, infants seem particularly adept at discriminating, storing and recalling what others visually witnessed or experienced with them (and also sort of know, based on it) in the context of joint attentional activities.[211] This makes possible *personal common ground* that is used to coordinate further interactions with those others (they discriminate with whom they have experienced what). It also affords opportunities to take into account others' somewhat different perceptual or epistemic points of view. For instance, drawing on personal common ground, infants would recognize that their adult partner seeks or wants specifically an object that is *new for him* (though not for infants) in that it, in particular, was not previously jointly (hence manifestly) experienced within a bout of shared attentional activity. Having thus recognized what one's partner has (has not) experienced, they would hand, point to or show the object to him. This may be called a form of perspective taking.

Importantly, this is not "the psychological Given" (or "primitive") but, rather, a product of the developmental process that requires a significant social-experiential

[211] A note of caution. Moll and Tomasello (2007a) talk about infants' early skills of tracking others' experience (with things, events, situations). The idea of (*tracking*) *experience* is left vague. Presumably, however, tracking experience does not involve tracking perspectival aspects. So it does not amount to what I have above classified as insight into attention/seeing as an inner experiential state.

input. It appears to precede and facilitate the development of abilities that are usually taken to manifest a more explicit understanding of perspectival aspects as such. Thus, the so-called *Level 1 visual perspective taking* – tracking or computing others' line of sight and grasping that they may visually register different things than oneself – emerges in children at around the second birthday (some aspects perhaps sooner).[212] A more demanding *Level 2 visual perspective taking* – grasping that others may visually register the same thing or situation under a different aspect than oneself – develops later. The earliest evidence mentioned by him pertains to children at around their third year.[213]

So Tomasello's considered view seems consistent with a leaner interpretation of (a). Infants' early insight into attentional-intentional behavior is real but falls short of (i) and (ii).

The second, more serious issue concerns the recursive super-structure assumed by mentalizing accounts. On the interpretation of (b) under consideration, X must be capable of seeing/knowing/recognizing that: Y is (also) attending to O, that Y sees/knows/recognizes that X is (also) attending to O, that Y sees/knows/recognizes that X sees/knows/recognizes all this, and more. One concern about this is that it seems

[212] Some indirect measures (based on looking time) found some evidence of (what can be interpreted as a form of implicit) Level 1 visual perspective taking earlier but not sooner than between 13 to 18 months. Cf. Baillargeon and Sodian et al. (2007). There is also research (originally with adults) on automatic-unconscious computing of others' perspectives (as evidenced by so-called *altercentric interferences* on one's judgment about the contents of ones' own visual perspective). See Apperly (2011) and Butterfill (2020) for instructive discussions.

[213] Cf. Moll and Tomasello (2007b), Moll and Meltzoff (2011), Moll et al. (2013). Based on these studies, Tomasello hypothesizes that at around this age children can take others' perspectives (e.g., judge how they perceive an object) even though they differ from their own perspective – but only when they need not *confront* such perspectives with different/incompatible perspectives (including their own). The latter ability develops between 4 and 5 years old. But even here the vexed issue is what, when and how children understand about perceptual and cognitive episodes or states such as seeing and knowing and their relations. For instance, do children start to understand seeing as an experiential state when they reach Level 1 perspective taking? There is some evidence (Meltzoff and Brooks' 2009 study using visors) that Level 1 perspective-taking may involve some understanding of seeing in others as an experiential state. See Wellmann (2014) for a discussion. But this pertains to 18-month-olds.

unnecessary and psychologically implausible to assume (in the case of infants) that subjects must possess and bring to bear such a feat to interactively coordinate and sustain their attention to O with others through mutually following attention of one another to O and communicatively establishing attentional contact. Another concern is that mutual recursive mindreading does not even ensure what it should: even if both X and Y go through it, they could end up attending to O merely in parallel, rather than together.[214]

Such considerations encourage us to reconsider the question of what's going on in early joint attentional activities, including the psychological profile of infants engaging in them. Carpenter and Liebal gesture in a promising direction when they suggest that *communication* might be the key when it comes to *knowing something together*:

> Communication makes knowing something together instantaneous and effortless and simple enough for infants. It provides an indication (or confirmation or acknowledgment) that attention is shared and thus removes any doubt about whether the other saw or heard the thing too. One could even go so far as to argue that […]two individuals are not in truly joint or shared attention until they both signal — until they make it mutually manifest or public — to each other that they are. (Carpenter and Liebal, 2012, p. 167)

This brings us back to the classical account of joint attention. But then the question arises as to what it takes, psychologically speaking, to "make the thing mutually manifest or public" by way of signaling. If signaling involves expression and multi-layered mentalizing of something like communicative intents "Y wants me to recognize that he wants me to attend to O," then we have made no real progress at all (I take up this issue in section 3.3).

---

[214] Tomasello (et al.) sometimes says that, in most cases, when everything goes well, *knowing together* requires only that X and Y must both know/recognize of each other that they are both attending to O. Properly elaborated, this may be a step in the right direction. However, if we understand this in terms of higher-order states – as a mentalizing account would have us understand them – then the objection has still some bite. I will shortly introduce what I consider to be one promising elaboration of this idea in terms of transparent perceptual availability ensured by attentional contact embodied in a sharing look.

An alternative proposal can be articulated that draws on the following ideas of Juan Gomés[215]:

> […] I would like to suggest that mutual awareness begins as mutual attention to the signs of attention, as attention contact. When two organisms are confronting each other, they can be said to be aware of each other's physical presence; but if they also are in attention contact, they are aware of something else. Their perception is focused on each other's signs of attention, and insofar as we admit that the signs of attention are signs of awareness, they can be said to be aware of each other's awareness. An organism can handle another's awareness at least in two ways: by imagining the other's mental experiences (i.e., using a metarepresentational theory of mind) or by perceiving the external signs of this awareness. The mutual awareness involved in attention contact is more perceptual than intellectual: Organisms in attention contact don't think of each other thinking of each other; they perceive each other attending to each other. (Gomés, 2018, p. 76)

At a basic level, mutual awareness is embodied in affectively loaded *attention contact* typically manifested in *eye contact*. Following Carpenter and Liebal, this can be interpreted as a form of communication or reciprocal signaling: a mutual or sharing look.[216] It is usually preceded and followed by other expressive-directed behavioral responses. From this perspective, basic forms of triadic attentional behavior in children may be interpreted as phenomena that naturally build on and extend earlier (dyadic) protoconversations (emotion sharing), in which an infant and adult reciprocally exchange bodily movements, looks, smiles, voices, etc. In triadic joint attentional activities, their interest shifts to an external target and their reciprocal expressive behavior keeps each other attentionally on track and aligned. Perhaps this manifests a prereflective, preconceptual awareness of "mutual perceptual availability" on the part

[215] See Gomés (1994), (2004), (2006).

[216] Carpenter and Liebal (2012) also stress sharing looks. Their core idea is congenial: communication (in particular sharing looks) ensures mutual knowledge without recursive mindreading (thus without the full recursive structure of common knowledge). The main difference may be that they may assume a richer, mentalistic account of infants' grasp of basic attentional-perceptual or intentional behavior.

of the infant. At this early stage of the child's social-cognitive development, mutual awareness – common ground - of co-attending to something may not amount to more than this. Partners proactively engage and sustain the attention of each other to the focal object by communicatively-cum-affectively responding to the object and one another's response. The social-recursive order, if any, is this structure of responses to responses to responses. The child grasps that such responses concern the focal object of interest (often excitement). To this extent, indeed, the child understands something about the *intentionality* of such responses. But the child need not yet have any cognitive insight into attention as an experiential state underlying such "attentional behavior." So he need not entertain higher-order intentional states targeting such states.[217] If this account is on the right track, no skills of multi-layered mindreading are required for infants' early triadic attentional activities. Rather, they may facilitate or scaffold their development.[218]

What is Tomasello's take on this issue? I noted that he is often read as a proponent of the rich account of infants' joint attentional behavior who endorses (b).

---

[217] This kind of account is a *via media* between (too) *lean accounts* (attentional coordination is based on the skills of reading and reasoning about overt behavior devoid of any mentality) and (too) *rich accounts* of joint attentional activities (attentional coordination is based on the mentalizing skills of attributing and reasoning about mental states and contents). Congenial ideas can be found in Bogdan (2009) and Hutto (2011). Hutto goes still further when he proposes that infants' competence (he calls it "elementary mind minding") need not involve any representations (thus concepts) of any mental states, their contents or relations. He accounts for elementary mindreading in terms of agents (e.g., infants) exhibiting intentional attitudes (directed but non-contentful) toward other attitudes of the same kind (e.g., paying attention to other's attention), in some cases thereby possibly indirectly tracking (but not representing) also contentful mental states. This, in turn, is similar to Bogdan's notion of sensitivity to purposed directedness, which, in turn, is similar to Gomés' account sketched above.

[218] If fancy mentalizing is not required for basic forms of joint attentional behavior, do non-human animals engage in such behavior? Goméz (2009) documents that anthropoids engage in forms joint attentional (communicative) activities based on gaze-following, attention (eye) contact and other attention grabbing or directing communicative behaviors. That does not mean that there aren't pronounced differences between apes and human infants in this domain. Whilst apes follow and direct attention solely or mostly to induce action, infants are eager just to point to or show a thing for the sake of sharing interest or experience. Carpenter and Call (2013) mention other pertinent differences that concern abilities and motivations for mutual monitoring of attentional focus.

But here, again, we should read his views as charitably as possible. After all, he is adamant that the social-recursive structure (attention toward another`s attention toward one's own attention, etc.) might be *implicit*, meaning that infants (likely also adults in mundane interactions with their peers) need not actually represent (think or reason about) it.

What are we to make of this? Adults are capable of representing or making the structure explicit (at least up to a few orders or levels) when the need arises to do so. In part due to this ability, they might scaffold infants by perceptively tuning into their attention, providing them with the right kind of signals, feedback, etc. Yet, we have noted that the evidence does not warrant the attribution of such skills to infants. In their case, we might say that the order is implicit in that they are scaffolded by adults who can represent it; with due social experience and scaffolding, they will eventually develop the skills required to represent it themselves so that the scaffolding would no longer be needed.

## 5. Ad Joint Action

Joint intentional activities (hereafter JAs) are paradigmatically collaborative activities organized around shared goals and structured by joint attention and some common ground. Tomasello submits that well before humans become cultural and linguistic practitioners, participation in such activities plays a critical role in the development of their grasp of different perspectives, roles and proto-normative standards governing them. A particularly important developmental juncture is when they start to engage in JAs displaying – in some form - the dual-level structure of shared goals with different roles and shared attentional focus with different (perceptual or cognitive) perspectives upon it. In this context they start to grasp something about self-other equivalence and role-relative standards of proper performance that derive from overarching (if *ad hoc*) shared goals of "us" (that is, second-personal normative expectations, commitments, responsibilities).

To describe various facets of JAs, Tomasello draws rather freely on standard philosophical analyses (hereafter SPAs) of what it takes *to do something together*

based on *shared goals* or *intentions*.[219] Specifically, then, he suggests that Michael Bratman's account of shared intention intimates the distinctive intentional structure of JAs:

> We may characterize the formation of a joint goal (or joint intention) in more detail as follows (see Bratman 1992). For you and me to form a joint goal (or joint intention) to pursue a stag together, (1) I must have the goal to capture the stag together with you; (2) you must have the goal to capture the stag together with me; and, critically, (3) we must have mutual knowledge, or common ground, that we both know each other's goal. (*NH*, p. 38)

This is a simplified version of Bratman's account of *shared intention* (one required for shared-cooperative action): I and You share an intention to do something (J) together if:

> 1. (a) I intend that we J and (b) you intend that we J 2. I intend that we J in accordance with and because of la, lb, and meshing subplans of la and lb; you intend that we J in accordance with and because of la, lb, and meshing subplans of la and lb 3. 1 and 2 are common knowledge between us. (Bratman, 1993, p. 106)

Different SPAs offer different accounts of shared intentions and actions based on them; but, much like Bratman, they usually analyze shared intentions and activities in terms of complex conceptual and social-cognitive skills.[220] *Prima facie* at least, this makes sense, because their main explanatory goal is to shed light on what it takes for mature-socialized human agents to do something together based on sharing goals or intentions.[221] Unlike SPAs, however, Tomasello aims to provide a developmentally plausible account of what is going on in the early JAs in which infants engage. Indeed,

---

[219] Exemplary cases of such activities are walking together (Gilbert 1990), preparing food together (Searle 1990), singing a duet together (Bratman 1992).

[220] Searle is a prominent exception, as he conceives of *we-mode* intending as a psychological primitive irreducible to *I-mode* intentions plus elaborate superstructures such as common knowledge.

[221] But they received criticism on the score that they may oversophisticate even mundane joint actions of mature humans: often, mentalizing involving higher-order intentional states and reasoning about them does not seem to capture what goes on in our adult minds when we engage in shared activities.

its interest is that it promises to explain the development of conceptual and cognitive skills of the sort that SPAs take for granted. The problem is that his account of such activities may also presuppose skills that the developmental approach should seek to illuminate.

To drive this point home, let's focus on the Bratmanian account of JAs. Whatever its philosophical merits as a *rational reconstruction*[222], one concern about it is that *sharing intention* in Bratman's sense requires the cognitive wherewithal to represent representational mental states (such as intention, knowledge), including nesting such (meta-)representations in one another (up to common knowledge).[223] This demands considerable cognitive sophistication from participants in JAs. For one thing, there is little independent evidence that young children are capable of that kind of mentalizing. To repeat myself, current evidence rather indicates that it depends on language. Yet, infants already engage in JAs of sorts, which paves the way to language.[224] For another thing, the Bratmanian account presupposes *representational,* specifically *propositional* mental states as that which is targeted and nested in higher-order mental states. Now, it is one thing to claim – as Tomasello does - that infants already have *some grip* on intentionality and first-order mental states of perceiving, knowing, wanting something, etc. We shall see that there is some pertinent evidence

[222] According to Bratman, to account for shared intentionality we need to invoke only basic capacities of individual intentionality and practical rationality (which we need anyway to account for the more basic case of intrapersonal and cross-temporal intentional planning and agency), plus the capacities to (meta-)represent and align our individual intentions, including meshing their subplans, within interpersonal rational planning, coordination and bargaining. If so, there is no need to introduce new kinds of agents or attitudes such as irreducible group agents (minds) or primitive we-mode attitudes.

[223] The common knowledge mentioned in (3) is supposed to refer to all intentional structures mentioned in 1. and 2.

[224] This was pointed out by Tollefsen (2005), Pacherie (2011), Butterfill (2012). Note that Bratman claims only that his conditions are *sufficient* for sharing intention. Cf. Bratman (2014). This allows for psychologically less demanding accounts of capacities required for shared goals and activities that might apply to "premature" (preverbal, precultural) humans. The concern that I am going to urge is that, precisely because of such considerations, it is problematic for Tomasello to invoke Bratman's account.

for this claim, though the open issue is how to interpret it.[225] It is another thing to attribute – as Tomasello does not! - to infants (or preverbal creatures) some grip on specifically propositional-representational psychological states (paradigmatically *belief*). Here, again, it may be argued that this grip depends on language.

Relatedly, within our folk-psychological framework for making sense of each other as agents acting for reasons, *knowledge*, *intention* and related notions – *belief*, in particular - are interrelated notions. Philosophers, including proponents of SPAs, typically assume that desire, intention, knowledge and belief are (a) individuated by their propositional contents that conceptualize states-of-affairs in particular ways, and (b) are conceptually interrelated in various ways that reflect their functional (causal or explanatory) role in the economy of perception-thought-behavior subject to rational constraints (e.g., of practical reasoning). Their model here is the *belief-desire psychology* that the folk-psychological framework is supposed to embody. Paradigmatically, the framework is deployed to understand (predict or explain) one another's behavior in terms of wanting something to be the case and believing (or knowing) that a certain act or behavior is a fit means to that end. Bratman's major contribution consists in pointing out that, in the human case at least, we should assign an important role to *plans* for actions, where intentions are elements of larger and typically hierarchically structured and future-directed plans. This functional role of intentions, moreover, is subject to normative constraints of practical rationality such as the following: typically, if one intends to J, then one ought to believe that he/she will J; and, on pain of irrationality, one's intention ought to be able to be put together

[225] In addition, the term "representational" (similarly "intentional") is ambiguous. At its simplest, it may mean "referential" in the sense of being directed at or being about something. But it may also mean "contentful" in the sense of encoding some information about something or presenting something as something (some perspectivality is involved). In the latter case, then, is representation preconceptual or conceptual? In the conceptual case, is it non-propositional or propositional? Depending on one's intuitions/conceptions of and/or envisaged theoretical role for *contents*, *concepts* or *propositions*, there may be controversies about the very criteria or principles underwriting the latter two distinctions (even about whether a given distinction can be sensibly drawn at all – e.g., in the case of non-conceptual content).

with the rest of one's intentions into a plan which is consistent with one's beliefs.[226] So, the notion of *intention* is closely tied to that of *belief*.[227] Likewise, the traditional consensus about *knowledge* (hence about common knowledge) is that one who knows something (*p*) is in a belief-type state of *taking (accepting) p as true*.[228] It is usually also assumed that such a taking must be *justified* (though there is no consensus on whether this requires access to reasons/evidence, reliable processes, cognitive virtues or whatnot). So also knowledge and belief appear to be intimately linked within our folk-psychological framework.

Now, recall that, in Tomasello's own framework, mature grasp of the notion of *belief* emerges much later than the cognitive skills and motivations required for early JAs:

> It is likely that young children begin to think in terms of multiple different perspectives on things from as soon as they participate in joint attention with its two perspectives during late infancy […] and we may hypothesize that this was the case for early humans as well. But it is not for several more years that children come to a full-blown understanding of beliefs, including false beliefs, because they (and so presumably all humans before modern humans) do not yet understand "objective reality." (*NH*, p. 87)

So two-year-olds display the rudimentary skills of joint attention and intentionality, including having some grip on perspectives. But fuller understanding of belief, and so

---

[226] This is important because it helps to distinguish intentions from desires. One might well have desires for incompatible things; but in order to enact intentions – as parts of larger rational plans that serve to coordinate a sequence of actions over time and ensure one's persistence – one's intentions better be consistent with one's beliefs about means-end relations as well as with one's other intentions.

[227] Davidson (1984) famously argued for the link between intention and belief in a somewhat different way. To understand one's intention to retrieve a thing from the tube I must understand that one believes (or knows) that the thing is in the tube. Accordingly, representation (grasp, notion) of someone as intending something presupposes representation (grasp, notion) of him or her as believing that thing. At least, the link seems to hold between our full-blown folk-psychological notion of intention and belief.

[228] Though see Williamson (2000) for a so-called *knowledge-first approach*, according to which the notion of knowledge is a basic one.

of the difference between subjective and objective perspective, emerges no sooner than between 4 to 5 years. At this point, their linguistic skills are quite advanced and they reliably pass a variety of classical false-belief tasks[229] (more on this issue soon). But if infants do not display a full-blown grasp of *beliefs*, one wonders why the situation should be any different with their understanding of *knowledge* or *intention*. If we accept that "it is not for several more years that children come to a full-blown understanding of beliefs, including false beliefs," perhaps we should also draw the implication that it is not for several more years that children come to a full-blown understanding of knowledge or intention. Or so at least it seems if we take into account inferential links that our folk-psychological practice forges between those notions.

With this in place, the first challenge can be articulated more sharply. Tomasello's account of the intentional structure of JAs defers to Bratman's analysis of shared-cooperative activity. The latter, however, presupposes a rich understanding of others as *intenders* and/or *knowers*, hence as *believers*, including sophisticated mentalizing skills of meta-representing and reasoning about intentions, knowledge or beliefs as representational-propositional mental states. Infants already engage in JAs. But we are not warranted to attribute to them such understanding and/or skills. Indeed, their folk-psychological competence is something that the developmental approach should illuminate, rather than assume from the start. So my interim conclusion is that SPAs such as Bratman's might not be Tomasello's most natural allies when it comes to illuminating a psychological infrastructure for participation in social-normative practices that provide the setting in which objective forms of conceptual (propositional) discourse, thinking and reasoning emerge. This is important for its internal consistency (for it has this explanatory ambition) and for our task of comparing it with language rationalists who endorse that claim (in their own way).

To be fair, Tomasello is aware of this. Whilst Bratman's account might intimate the intentional *backbone* of joint action, Tomasello's own account of basic JAs does not have to take over its particular *flesh*. Consistent with his developmental approach, he might have in mind something psychologically less demanding than what is implied by Bratman's account. The following excerpt from his replies to

[229] Wimmer and Perner (1983).

commentators (myself included) is particularly suggestive in this respect (emphasis is mine):

> […] I stated my analysis and cited Bratman for the inspirational idea. In particular, I have used the term joint goal in preference to joint intention to avoid any confusion with intentionality as a broader characterization of thinking. Again drawing on the analysis of ape thinking, which includes individual attention, *joint attention represents a joining of the attention of two individuals, each of which is already structured by schematic representations of perceptual experience of whole situations. Joint intentionality is not propositional* – if that requires objective content – but it has the seeds of this by joining together individual intentionalities that already have non-propositional perceptual content of fact-like situations. And so I am again attempting to invoke a kind of dialectic in which *great apes' individual intentionalities (based on non-propositional content) are the starting point. Joint intentionality joins these together in a new way but without, as yet, any objective content*; that is still to come. (Tomasello, 2016, p. 119-120)

We are told that young children who qualify as joint intentional agents do not yet entertain objective-propositional contents. By the same token, they do not (meta-)represent objective-propositional contents or thoughts as such. Nevertheless, they may have a partial grasp of mental states such as "seeing," "knowing" or "intending." In particular, they may understand those aspects that do not require understanding:

- objective-propositional aspects of those mental states (thus no understanding of the notion of *belief* as a paradigmatic such state);
- all the normative-rational links that our rich notions of such states have to our rich notions of other states (and to *belief* in particular).

Children draw in part on ape-like first-order intentionality (representations of external objects and situations) as well as on second-order intentionality (mindreading skills of understanding something about seeing, knowledge or intention). In addition, joint intentionality allows them to "join" those in a "new way." In view of this, what is called for is an empirically informed account of which particular aspects of and links

between psychological states children do (and do not) understand and of sharing such simpler states.

Tomasello distinguishes full-blown *belief-desire psychology* from *perception-goal psychology*. The later is available to prelinguistic creatures, including infants and anthropoids (it may be a common heritage with a strong biological-maturational component).[230] In addition to understanding something about intentional relations between other agents and their reference goals, it disposes agents to understand the elementary intentional relation of *somebody knowing something* in the sense of *somebody being familiar (acquainted) with it* based on having perceived it (typically visually). Because this relation is to something non-propositional and does not entail belief (with related intensional and objective dimensions), it may be easier to grasp and make use of in social interaction (predicting. coordinating with or manipulating other agents). Something similar holds for the notions of *intention* and *goal*, too. Even if we reserve the first notion for something along Bratman's lines, we can still say that young children have some grip on intentional behavior in the sense of goal-directed action, where *goal* is something simpler than intention (understood *à la* Bratman). To wit:

> By 10 months of age, infants segment streams of continuous behavior into units that correspond to what adults would see as separate goal-directed acts. This is clearest in the case of actions that are not immediately successful […] (Tomasello et al., 2005, p. 678)
>
> […] infants of this age also demonstrate an ability to understand an actor's persistence to a goal – which involves an understanding that actors perceptually

[230] In the next chapter we shall see that Tomasello thinks that whereas apes are stuck with perception-goal psychology, humans progress to belief-desire psychology along a unique ontogenetic pathway: namely developing the skills of understanding and coordination of perspectives in communicative joint attentional and intentional interactions (early on) and linguistic exchanges (later on). What Tomasello calls perception-goal psychology is close to Wellman's "desire psychology" (Wellman, 2014). In fact, despite different theoretical backgrounds, most developmentalists recognize something like perception-goal psychology as preceding in the ontogenetic sequence belief-desire psychology (or at least its fluent use).

> monitor and recognize when their actions have changed the world in the desired way. (Ibid., p. 678)
>
> […] 9- to 12-month-old infants understand at least one aspect of trying: actors routinely go around obstacles to get to goals. (Ibid., p. 678)
>
> [...] infants display an understanding of the persistent nature of goal-directed activity […] when they distinguish purposeful actions from accidental actions, knowing that an accidental action will not satisfy the actor's goal […] (Ibid., p. 679)

What is more, at some point, infants seem capable of understanding something also about *plans*, hence getting even closer to *intentions* (if still falling short of Bratman's richer notion):

> […] following their first birthdays, infants begin to understand that, in pursuing a goal, an actor may consider various action plans (means) and chooses one to enact in intentional action based on some reason related to reality. (Ibid., p. 679)

Such claims are taken to be supported by experimental studies in which infants produce flexible behavior that can be interpreted as based on understanding agents' goals or intentions (as well as perceptual states) in this attenuated sense. The idea that prelinguistic creatures have at best a *partial grasp* of psychological states denoted by folk-psychological concepts (or that they *track* simpler states involving certain aspects of such states) is consistent with the developmental approach. The challenge is to determine what, when and how children grasp or track such states and their relations. Open issues in this research domain are analogous to those discussed in the case of joint attention. For instance, available evidence does not univocally support rich mentalistic hypotheses according to which infants (like those engaging in early JAs) grasp *subjective* (perspectival) aspects of others' goal-directed behavior.[231] I have previously noted that Tomasello might have a nuanced view of the social-cognitive development of such mindreading capacities. At this juncture, too, I shall therefore

[231] See Perner and Doherty (2005).

charitably assume that he is prepared to admit that this development is catalyzed by infants' participation in JAs. Basic forms of JAs do not presuppose such skills.

That said, another problem looms large when one tries to give an account of what it takes to "share" such simpler mental states that is compatible with such limited understanding. For there is a temptation to account for this "social glue" *à la* Bratman: in terms of recursive structures embedding mental states, up to *common knowledge* (iterable without an upper bound) or *mutual* (*common ground) knowledge* (limited iteration to the effect that both/all agents know something and both/all know that this is so).

The strategy is not hopeless, in principle. If relevant first-order mental states are simple enough states of *having a goal*, *seeing* or *knowing something* posited by perception-goal psychology, perhaps mentalizing that feeds on such first-order states and yields higher-order states is (relatively) simple, too. In particular, if *recognizing others' perceptual* or *knowledge states* as well as others' *goals* is within reach, the following might be true: a) X has the goal of J-ing with Y, b) Y has the goal of J-ing with X, c) X and Y both recognize a) and b), d) X and Y both recognize c). So X and Y may both *recognize* (thus *know*) that they *both recognize/know* each other's *goal* to J together.

But I am concerned that even this might be over infants' heads. Many thinkers would agree that joint attention and coordination of activities is required for joint action; but not everybody thinks that rich mentalizing is needed to account for the evidence of early collaborative activities of infants. On Tomasello's account of joint action towards a shared goal, mutual knowledge requires agents to entertain intentional states of at least 3rd order: *I know that you know that I have the goal of J-ing with you*. Yet, we have evidence that 6-year-olds or even older children still struggle to entertain such higher-order states (see also the next section for the application to the case of cooperative communication).[232] Therefore, recursive mentalizing feeding on representations of mental states (if simple) seems cognitively too demanding to be attributable to infants. Moreover, if my previous discussion of joint attention was onto

[232] Perner and Wimmer (1985).

something, another concern is that mutual recursive mindreading might not even suffice to account for the characteristic relation of *mutuality* or *togetherness*.

If these concerns are legitimate – and I tend to think they are - how can we do better?

One way is to go *minimalist*. In this vein, Stephen Butterfill (2012) argues that there is room for an account of joint action capitalizing on the notion of a *shared goal* around which a *plural activity* of multiple agents is coordinated in the sense that: a *shared goal* is an outcome toward whose realization each participant directs her action, each participant having *behavioral expectations* to the effect that (a) other participants would perform an action directed to the goal and that (b) the outcome would be realized as a common effect of goal-directed actions of all of them.[233] This account of plural action can distinguish between joint and merely parallel actions (that may be behaviorally similar). And it requires neither abilities to meta-represent propositional mental states, nor skills of recursive mindreading to establish common (ground) knowledge.

As I understand it, Butterfill's proposal is of a piece with the *minimal theory of mind* proposed by Butterfill and Apperly (2013). They suggest that a mindreader X (infant or non-human animal) armed with a minimal "model" of minded agents has the cognitive wherewithal to reliably *track* mental states of other agent Y such as perceptions (e.g., seeing), knowledge, simple beliefs or intentions.[234] However, not by

---

**233** This is a simplified version of Butterfill (2012, p. 16-17). Butterfill (2020) further elaborates this proposal. The core idea is that if we assume (following Bratman) that shared intentions coordinate interpersonal action (planning, bargaining), we had better give an alternative account of early JAs. For curent empirical evidence does not indicate that young children do not have implied skills (e.g., for planning). Butterfill proposes that early JAs may require only expectations concerning common (shared) goals.

234 *Perceptual* episodes such as *seeing something* are understood as states possessing *propositional content*. They differ from simpler experiential states, which are directed at (configurations or *n*-tuples of) objects. The difference is that perceptual episodes display a perspectivality that translates into intensionality: they present something under a specific aspect so that two states presenting the same thing under a different aspect are different states. The point is that a minimal mindreader can reliably track perceptual states by representing their proxies – encounterings. According to the authors, the same applies to knowledge-states in their natural epistemic reading: as they have propositional contents they

having concepts of such states and by representing or attributing them *as such*. Rather, X tracks such states of Y by representing or attributing their (reliably co-occurring) proxies. Those proxy-states are simpler mental states of a non-propositional variety such as Y's *goals* (external outcomes that Y's behavior brings about), *encounterings* (with objects in Y's perceptual field) and *registrations* (of objects encountered by Y that Y has not subsequently encountered elsewhere). Of these, registrations are closest to propositional mental states (and to belief in particular) in that they are apt to be correct or incorrect, depending on whether a thing represented by X as registered by Y at a location L is or is not at L.[235] Based on this kind of indirect tracking, X can (reliably) predict Y's behavior (manipulate or coordinate with Y). This framework is designed to account for efficient but inflexible skills of social cognition that are in evidence in chimpanzees' approach to food competition tasks (Hare et al. 2000, 2001) or in infants' approach to non-verbal false-belief tasks. Whereas apes might be stuck with it, normal humans progress to develop a more robust system of mindreading, up to a full-blown folk-psychology of beliefs, desires and intentions.[236] It suggests itself that representing simple states such as goals, encounterings and registrations might also be vital to primordial joint activities, requiring neither full-blown understanding of knowledge, beliefs or intentions (and hence no higher-order intentions implied in Bratman-style accounts of shared intentional activities), nor, for that matter, common

---

can only be tracked (not represented as such) by the minimal mindreader. Registrations, then, serve as proxies for beliefs: by representing the former the minimal mindreaders can track the latter. Bermúdez (2009) offers a somewhat similar account of mindreading skills of non-linguistic creatures, though he draws the difference between perceptual and propositional mindreading respectively. But what he calls "perceptual" states are simple experiential relations to configurations of objects. In this respect, then, they are like encounterings.

[235] For more precise accounts of these notions the reader should consult Butterfill and Apperly (2013). See also Butterfill (2020).

[236] Minimal theory of mind, though limited, may continue to influence even the social cognition and activities of adult individuals. This is consistent with a *dual-process model of mindreading* proposed by Apperly and Butterfill (2009): (1) automatic, computationally cheap, inflexible but efficient mindreading processes (tracking mental states without representing them as such), (2) non-automatic, computationally demanding, flexible but inefficient mindreading processes (representing mental states as such).

(ground) knowledge on the part of agents coordinating their actions around a shared goal.

This proposal, however, leaves Tomasello cold.[237] He is concerned that it is so "thin" that it leaves out the key element of *togetherness* altogether.[238] According to him, chimps coordinately chasing a monkey satisfy all Butterfill's conditions. However, unlike infant-adult dyads, they do not genuinely work *together* toward a common goal. They coordinate with others in the course of pursuing their individual goals of maximizing their share of meat. So, they want to be in the best possible position vis-à-vis this goal. To this end, they take account of others' actions and positions in order to end up in the best possible position to attain that individual goal.

In reply, one might complain that Tomasello's "lean" or "deflationary" account of the chimpanzees' group hunt (in marked contrast to his "rich" account of infants' collaborative activities) is not even-handed. In this vein, it has been argued that the hunt satisfies Tomasello's own operationalized criteria of shared collaborative activity such as division and coordination of roles (e.g., drivers, ambushers, blockers) and sharing the spoils at the end of the day (preferably with active contributors).[239] Recently, moreover, Suchak et al. (2016) obtained some experimental evidence of voluntary collaboration of chimpanzees in a semi-natural environment, including attempts to hire others for the collaborative activity, sharing peaceably the spoils, or even third-party interventions directed against greedy bystanders who attempt to steal hard-won rewards from collaborators.[240] Such data may be taken to suggest that "the

[237] A different kind of criticism may come from more radical, anti-representationalist positions. Hutto (2011) worries that it makes no sense to attribute *correctness* to registrations without also attributing to them truth-conditional, hence propositional contents. Which, of course, is what this kind of account wants to avoid. Also, he worries that it is not clear what warrants the idea that registrations and other simple non-propositional psychological states need to be "represented" (presumably with the aid of concepts of such states) as opposed to being targeted and tracked in a pattern of (intentional) responses. Whatever one may think of Hutto's "radical enactivist" line of reasoning, it applies, *mutatis mutandis*, to Tomasello's own version of early understanding of intentional agents (perception-desire psychology).

[238] Cf. Tomasello (2016).

[239] See Boesch (2012).

[240] Compare also de Waal (2016).

gap" between *us* and *them* is more about motivations than cognition (chimpanzees' different ecologies and lifestyles make collaborative foraging less needed and hence exploited).

Whoever will have an upper hand in this debate, minimalist models are useful tools for the comparative and developmental approach to social cognition and interaction. They allow us to distinguish different grades of joint action (shared goals, intentions, etc.), ranging from cognitively thinner to ever more demanding, thicker versions. Still, Tomasello might be right that there is an intermediate grade of plural action between *too thin* (suitable for chimpanzees or Butterfill's agents equipped with only a minimal theory of mind) and *too thick* (suitable for Bratman's mature folk-psychologists). Unlike chimpanzees, young children might engage in such activities with their caregivers, which might play a critical role in the development of their communicative skills, grasp of different perspectives, meanings (references) of words or agent-neutral normative standards. Even so, the question is still on the table whether evidence specifically favors Tomasello's rich account in terms of recursive mindreading over more parsimonious accounts that do without it. I have reviewed some reasons to doubt both its phenomenological and developmental adequacy.

If those considerations have some merit, we have reason to look for a different account of the intermediate grade of joint action that might be developmentally more plausible.

Recall that early JAs of infants and caregivers are characteristically reciprocal and affectively loaded interactions with partners (caregivers) revolving around focal objects. In addition to tuning into the line of regard of one another, interactants coordinate attention toward a focal object in a communicative manner by reciprocating (sharing) looks, smiles, etc. In the case of basic goal-directed activities, in addition, partners act upon the object in a coordinate manner (the child and adult might build a simple tower together in a turn-taking manner). Such JAs are natural continuations of triadic attentional activities using similar mechanisms (sensory-motor or cognitive schemas) that the child relies on when engaging in his goal-directed activities or when parsing such activities of others. In addition, infants may understand (track and parse) attentional and goal-directed behavior as selectively directed at external targets, which they may treat as kinds of *valenced affordances* - something interesting to look at or

something desirable to get or engage with - for everybody who is co-present and competent. This explains motivation to exploit the "shared" affordance with a co-present/competent subject (caregiver) – eventually also to help him and to coordinate activities/roles - whilst infants' cognition might be devoid of all (but shallow) psychologizing.[241]

Arguably, *common ground* of sorts is both formed within and facilitates or coordinates such JAs (concerning objects, relevant features of the situation and goals). Tomasello is therefore not wrong to emphasize that this form of "being in it together" involves the aspect of "knowing it together." Yet, the formation and facilitating role of common ground in early JAs need not involve (and is unlikely to involve) the skills of recursive mindreading on the part of the infant. Some empirically and developmentally motivated approaches recognize this concern and accordingly propose to do without such skills. So, Bohn and Köymen (2018) suggest that infants begin to form common ground with caregivers in direct interactions structured by joint attention. The latter may well scaffold the interaction, but the former need only represent the contents of common ground as mutually perceptually available ("manifest") and expect their partners to act in light of this. This account is given specifically for communicative-referential interactions, in which common ground serves the role of narrowing down (disambiguating) the space of potential referents (of a pointing gesture, say). But nothing prevents us from extending it to shared goals. Of

[241] In this vein, *teleological* approaches have suggested that young children – perhaps up to 4 years – might not yet think of desirability of things or outcomes as a matter of subjects' internal desires (subjective reasons). They might treat it as a kind of valenced affordance: an "objective" feature of the thing itself (just as they may treat colors or even "names" as such intrinsic features). Likewise, they might not yet index means-ends relations between actions and desirable goals to particular subjects as their beliefs; they might treat them as facts out there for everybody to access. If so, they might implicitly treat shared situations as affording sort of "objective" reasons (valenced affordances) for others to act in certain ways. Because such reasons are *out there for everybody* as motivators, they ground expectations and might explain both helping behavior and collaboration towards some desirable goal. Cf. Roessler and Perner (2013). Proponents of this view are adamant that it is an alternative to rich mentalizing accounts of young children's understanding of intentional agents and actions. They apply this lesson also to joint collaborative action and cooperative communication. See, in particular, Perner and Esken (2015).

course, for this account to work, joint attention between infants and caregivers cannot itself be explained in terms of infants' exercise of recursive mentalizing. But we have already dealt with this issue.

I submit that an alternative account along these lines serves the developmental approach, not assuming social-cognitive skills that it should rather illuminate. And it does so whilst capturing the aspects of *jointness* (in joint attention) and *togetherness* (in joint activity).

## 6. Ad Intentional Communication

A similar problem haunts Tomasello's neo-Gricean account of communication based on the skills of joint intentionality. It should become clearer if we first state the problem for the original Gricean account, then consider whether Tomasello's fares better.

Grice's undertaking was to account for a *non-natural* variety of *meaning*.[242] It requires the communicative context involving producers and consumers of signals ("utterances") including non-verbal ones typified by points, gestures or vocalizations. In or by producing a certain signal, producer X intends to bring about a certain response in consumer Y by making this intention overt so that Y can recognize it and recover its gist. The intended effect may be that Y believes something (informative cases) or that Y does something (imperative cases). Grice's original analysis involved some aspects that provoked well-known counterexamples that he and others tried to block by modifying it. The least controversial core of his account of communication involves the following ingredients (allegedly individually necessary and jointly sufficient):[243]

---

[242] Grice (1989). *Natural* meaning is paradigmatically a matter of something reliably indicating something else, where this has nothing to do with there being a producer *meaning* something in an intentional sense of that word (e.g., smoke means fire).

[243] Here I follow Moore (2017a), (2018b) and Neale (1992). Grice's original analysis did not involve the clause (3); it involved a clause to the effect that: X intends Y to fulfill (1) on the basis of his fulfillment of (2) (or: X intends that Y's recognition that X intends (1) gives Y a reason to produce *r*).

*Gricean account of intentional communication* (GAC): A acts with communicative intention (goal, intent) iff

X produces a signal (utterance) S, for some Y, intending:

(1) Y to produce a particular response *r*;
(2) Y to recognize that X intends (1);

and

(3) X does not act with any further intention that Y be deceived about intentions (1) and (2).

So conceived, intentional communication is all about manifesting and grasping *communicative intentions*. On the face of them, these are higher-order psychological states targeting or embedding other psychological states - *X intends Y to recognize that X intends Y to produce r* - that recipients recover based on the signal produced, the way it is addressed to them and other relevant cues. In the informative case, moreover, *r* is a mental state itself (belief). To grasp the embedding intention seems to require a remarkable cognitive skill to grasp up to four orders of intentionality: *X intends Y to believe (recognize) that X intends Y to believe that p*. [244]

On this reading of GAC – which we might well call "standard" - intentional communicators are mindreaders who attribute intentions and beliefs. Indeed, they are *recursive mindreaders* who attribute higher-order (nested) psychological states. This holds for preverbal communicators, too – or they are not *intentional* communicators at all.

Perhaps an account along these lines provides a rational reconstruction of the capacities of mature human communicators (not, necessarily, a descriptively accurate account of what thoughts or inferences pop up in their conscious awareness when they normally communicate). In the case of preverbal (language acquiring) communicators, however, it is problematic.

At the ontogenetic level, the main worry recapitulates the one that I articulated in the case of joint action. Unlike affective states, simple experiential states or goal-

[244] Cf. Dennett (1983), Sperber (2000).

directed behavior, propositional beliefs and intentions are abstract constructs whose role in folk-psychological sense-making practices is more complex. To grasp them thus requires some cognitive-conceptual sophistication that cannot be taken for granted. In fact, considerable evidence indicates that children grasp them after (at around four years) they start to engage in intentional, including verbal communication (already in their second year). Moreover, there is some evidence that their grasp of such notions depends on their acquisition of linguistic-communicative skills (more on this shortly). If so, it is even less plausible to assume that infants have the meta-representational wherewithal implied by the standard reading of GAC. At the phylogenetic level, then, it is something of a mystery how such a wherewithal and understanding of propositional attitudes could have emerged in hominins prior to and independently of communicative interactions in general and linguistic interactions in particular.[245]

Not everybody is impressed by such concerns. Sperber and Wilson (1986, 2002) think that the standard reading of GAC is OK. Communicative intentions are required for intentional communication of messages. And because such intentions (as well as their representations on the part of recipients) are higher-order mental states, metarepresentational-inferential machinery is indeed required to get messages across. Yet Sperber and Wilson also think that Grice (and his followers) misconstrued the nature of the machinery. For a great deal of it does not need to be at the explicit or conscious level. If so, infants (presumably, prelinguistic hominins) might be capable of it.

According to Sperber and Wilson, Grice's original account both overestimates and underestimates cognitive and inferential processes required for intentional communication. It overestimates metarepresentational skills, as it implausibly requires unbounded recursive mindreading supposed to ground common knowledge: (i) X intends to cause a certain effect in Y, (ii) X intends Y to recognize the intention in (i), (iii) X intends Y to recognize the intention in (ii), and so on indefinitely. This is deemed psychologically unrealistic. Instead, *mutual manifestness* is enough, consisting of the intersection of information that is manifest to both X and Y (being

[245] Cf. Bar-On (2013), (2019).

perceptually or inferentially available in their respective cognitive environments), where this fact itself is also manifest to both X and Y. Plus, Grice's account underestimates the amount of inferences that is required "to get the message across" in mundane communicative exchanges. According to it, receivers are supposed to engage in reasoning mostly in order to recover pragmatic or conventional implications linked to the core message – but not that message itself (at the very least, this holds once conventionalized signs are in place). Sperber and Wilson oppose this: as a rule, the message must be inferred from available cues as well. This is because different tokens of the same type-signal (utterance) may mean different things in different contexts. Flexible, context-sensitive inferential interpretation is therefore needed to determine the message based on *expectation of relevance*. So, according to Sperber and Wilson, by intentionally addressing signal (utterance) S to Y's attention, X means to supply relevant evidence from which Y can infer X's intention to thereby cause a certain response in Y.

This account still requires communicators to represent beliefs and intents and to infer from the evidence higher- (up to fourth-) order metarepresentations. Sperber and Wilson presuppose that such skills ground linguistic forms of communication.[246] Accordingly, if preverbal children or our hominin ancestors are intentional communicators, they must also possess such skills. But Grice's recipe for pragmatic interpretation (inferring implications) is not useful, because it construes the inferential process as a rule-based conscious reasoning. Instead, they suggest that a metarepresentational module specialized at intuitive interpretation of ostensive communication can be the mechanism, using to this end heuristics sensitive to relevance.[247] In this way, Sperber and Wilson hope to retain the idea that communication rests on mindreading and metarepresentation, whilst blunting the oversophistication objection.

The problem, however, is that Wilson and Sperber's ostensive-inferential account stipulates, rather than establishes, that any form of intentional communication requires the baroque recursive structure of nested mental states posited by the standard

[246] See also Origgi and Sperber (2000).

[247] Sperber and Wilson (2002).

reading of GAC. Relatedly, it too easily evades the problem of oversophistication by freely granting considerable mentalistic abilities to preverbal communicators. Even setting aside the controversial issue of whether - and in what sense - infants are sensitive to propositional states such as beliefs and intentions, there is little evidence that they can entertain and grasp yet higher-order representations of psychological states (such as "he thinks that I think that *p*"). What evidence there is indicates that six-year-olds and even older kids still struggle to pass tasks that tap such skills.[248] It begs the question to assume that infants are somehow capable of this higher-order feat – albeit, perhaps, implicitly.

What about Tomasello?

On the one hand, he subscribes to the view that intentional communicators express and grasp communicative intentions. If communicators want to get across some message to recipients, they should make this overt:

> […] the communicator […] makes sure that the recipient knows that he is attempting to communicate, as if to say: "You're going to want to know this" (i.e., that I have a request of you, that I have something I want to inform you about, that I have an attitude I want to share). This additional layer of intentionality […] is absolutely critical to the process and is most commonly referred to as the (Gricean) communicative intention. (Tomasello, 2008, pp. 88-89)

Tomasello thinks that intentional communication with the Gricean structure is a *cooperative* interaction.[249] Expecting cooperative motives, relevance and newness, recipients draw abductive inferences about why communicators overtly signal (e.g., point) for them the way they do in the given situation. Indeed, expecting and being cooperative themselves, communicators might appropriately choose their signals and accompanying cues vis-à-vis the situation to facilitate the process. Communicators engage in *cooperative reasoning* when they make social-recursive inferences of this

[248] See Liddle and Nettle (2006).

[249] See Moore (2018a) for a meticulous, critical discussion of the stronger claim – also apparently endorsed by Tomasello - that Gricean communication is always a form of cooperative *joint action*.

sort concerning communicative intents, based on the presumption of relevance and newness vis-à-vis common ground knowledge. That common ground comprises shared information relevant to the current communicative interaction, which helps narrow down the search space of possible intended referents or messages. At root, it is a matter of both parties knowing that they both know something, because it is or has been experienced within their joint attentional frame. This is usually enough. Further iterations – "I know that you know that I know […]," etc. – may be called for only when communication gets less smooth or breaks down. In order to repair it, communicating parties may need to mentally check or traverse higher levels of the (implicit) Gricean hierarchy.

On the other hand, for prelinguistic humans, Tomasello envisages a reading of GAC that requires less cognitive sophistication than the standard reading thereof. After all, his developmental approach assumes that preverbal humans are competent cooperators as well as communicators, though they have yet to develop a full-blown folk-psychological competence (aka "theory of mind") the mark of which is explicit understanding (attribution of) false belief. Consistent with this, he can flesh out GAC (for the paradigmatic informative case) so as to refer only to simple mental states:

> X acts with a communicative goal iff X produces a signal S for Y with the goal of
>
> (1) making Y recognize/know (or simply attend to) something;
>
> (2) making Y recognize/know that goal.

Applied to infralinguals, this interpretation has the obvious advantage that they do not need to understand propositional beliefs and other propositional states (such as full-blown intentions) interrelated with beliefs within our folk-psychological framework or practice. In terms of our previous discussion of joint action, young communicators may draw on a naïve perception-goal psychology falling short of belief-desire psychology.

Even so, preverbal communicators are still recursive mindreaders producing and consuming higher-order thoughts with quite a complex content indeed:

> X: I want Y to know (attend to) something, and I want Y to know that I want this.

> Y: X wants me to know something, and Y wants me to recognize (know) *that* he wants this.

Deferring to Wilson and Sperber, Tomasello concedes that this requires up to three or four orders of metarepresentation (depending on how one counts but always one order more for Y than for X). So even though his account might avoid some problems affecting the standard reading of GAC, it can still very well be worried that it is "too sophisticated a state to be found in a language-destitute creature." It still presupposes entertaining and inferring higher-order psychological states (though targeting simpler states). And it can again be argued that such capacities themselves call for a plausible developmental explanation, in which the key factor is the development of abilities to participate in early forms of intentional-linguistic communication that make them possible.

More generally, the suggestion that preverbal communicators - early in their second year - are cooperative reasoners is problematic. In addition to the inferential aspect of the ostensive-inferential model of intentional communication (*à la* Sperber and Wilson), cooperative reasoning also displays features of Grice's famous account of pragmatic inferences consistent with the overarching *cooperative principle*. Thus, Y as it were (a) wonders (in *foro interno*) *why* X is saying or doing this for him, then (b) abductively reconstructs *reasons why* and (c) *concludes*, e.g., "So X wants me to know that he wants me to know about the berries over there."[250] I agree that the label "reasoning" is appropriate for this train of thinking, because it involves inferences complex in terms of both content (including mental concepts and their complements) and structure. So construed, I am concerned that cooperative reasoning is dangerously close to the higher-level human capacity of thinking conceived of as a person-level process involving *explicit*, self-conscious thoughts (about thoughts) and inferences transforming them.[251]And that capacity was to be explained as the latter product of the social-developmental process with the critical role of linguistic communication. On the other hand, to claim that all this can be only *implicit* does not tell us what this

[250] Grice (1989).

[251] Cf. Tomasello (2014, p. 4) where he characterizes *thinking* (of theoretical interest to him) as a System II process *sensu* Kahneman (2012).

means beyond saying that communicators behave *as if* they explicitly represented and reasoned.

It is not that Tomasello is unaware of the challenge. Both phenomenological experience and empirical evidence suggest that mature speakers need not rely on that kind of perspective taking and explicit social-recursive reasoning. Instead, they seem to rely on various heuristic processes, even egocentric biases (projecting their own perspective, including exaggerating shared ground based on it)[252]; indeed, elements of the process of cooperative reasoning are often substituted or scaffolded by verbal negotiation *in fore externo*. And the objection against attributing *explicit reasoning* (about mental states) to infants is *prima facie* expectable. At some places, Tomasello goes on to say that our mundane ways of establishing or identifying common ground are "heuristic," and social recursive structure may be largely "implicit" in the process; anyway, social-recursive inferences rarely require communicators to go beyond a few iterations. At other places, he says that early forms of communication may manifest a primitive "we"-mindedness that does not need any higher-order, recursive structures.

> In explaining how contemporary humans operate in real time, it is possible that no notion of recursivity is actually operative, but rather humans simply possess a primitive notion of we-intentionality. Indeed, I think that this is exactly what young infants do; they simply distinguish situations in which we are sharing attention to something from those in which we are not. But as development proceeds, the various individual perspectives embodied in sharing are articulated out (presumably on the basis of bumpy interactions in which things thought to be shared turn out not to be) [...] when we turn to evolution [...] it is almost certainly the case that there was a point at which individuals simply began to understand something like "he sees me seeing it," and then only later did the full recursivity of this understanding become manifest. (Tomasello, 2008, p. 336-337)

But these intimations are never developed in sufficient detail. Surely, from the cognitive point of view, the resort to the talk about "a primitive notion of we-intentionality" is not particularly illuminating. After all, John Searle, from whom this

[252] Cf. Bloom (2000); Samuelson and Smith (1998), Barr and Keysar (2005).

idea seems borrowed, has been criticized on this score, including by Tomasello himself.[253]

One of Tomasello's collaborators, Richard Moore, has addressed the challenge head on. He gives a minimalist reading of GAC that he deems consistent with the core Gricean insight:

> The key claim is that when an agent deliberately draws attention to an action she is performing, she intends for others to know what it is that she is doing. This gives us a way to think about Grice's second clause in a cognitively undemanding way. For if an agent S deliberately performs one action A in order to draw H's attention to her performance of a second action B, and performs B in order to achieve some goal r, the performance of A would make B overt. Thus, in performing A to draw H's attention to her performance of B, S would intend H to grasp her intention to elicit from him r. In that case, so long as she did not act with any further intentions that would undermine (1) and (2), it would be analytically true of S that she was acting with communicative intent. (Moore, 2017a, p. 14)

Moore's model is tailor-made to apply to preverbal intentional communicators (both infants and apes) without oversophisticating their communicative behavior. Reminding us of Gomés' suggestions discussed previously, Moore points out that drawing others' attentional focus to the performance of B (e.g., pointing to berries over there) by way of performing A (e.g., establishing mutual attentional contact) is within the ken of such intentional systems. This is the first-preparatory stage of a two-stage communicative interaction. In principle, this does not require much mentalizing from either communicator S or recipient H. S wants/solicits H's attention (to make H look at him), whereas H must register this (and look at S). In the second stage, S expresses his intent/goal. Paradigmatically, S wants to inform H about something (to make H attend to the location of berries) or requests something from H (berries). This also does

[253] Searle (1990), Tomasello and Rakoczy (2005, p. 123), Rakoczy (2006, p. 124).

not require any particularly fancy mentalizing. At its simplest, S wants to direct H's attention to berries (to make H look at them) and H must recognize this.[254]

Now this is a mentalizing account of intentional communication along Gricean lines, but it keeps the required level of mentalizing at a minimum. It is consistent with assuming that young communicators can track, represent and to a limited extent reason about simple mental states. It can well be combined with a minimalist account of common ground - such as the one proposed by Bohn and Köymen (2018). It is also consistent with the hypothesis that the development (or evolution) of recursive mindreading is facilitated, first, by participation in such simple forms of Gricean communication and, second, by the acquisition of skills for linguistic communication. Thus, it is both congenial to Tomasello's view of communication and suggests how Tomasello could flesh it out so as to be consistent with his own developmental approach.

An alternative, even less mentalizing account of preverbal communication can be extracted from the *teleological* framework recently developed by Josef Perner and Johannes Roessler.[255]

Their hypothesis is that, at around the end of their second year, toddlers start to make sense of goal-directed intentional behavior as *teleologists* who expect others to behave as *agents doing things for reasons*. *Reasons*, within this framework, do not correspond to agents' internal-subjective take (perspective) on desirability and means-end relations (that is, to *subjective reasons* afforded by desires and beliefs proper). Rather, external (fact-like) features of situations are treated as (objective) reasons that call for action. Goals are treated by teleologists as positively valenced end-states worth

[254] Moore claims that if we focus only on such simple cases of communication – to which the repertoire of simple communicators may well be initially (infants) or systematically (apes) restricted – we will need to attribute at most second-order intentional states to communicators (recipients). This assumes his specific strategy (a) to separate two stages whilst (b) not counting attentional behavior (looks) as a first-order intentional state. Thus, if S wants H to attend to him or to berries, this is simply a first-order intentional state. Accordingly, in recognizing this goal (want) H entertains a second-order intentional state.

[255] Roessler and Perner (2013), Perner and Roessler (2013), (2015), Perner and Eskin (2015), Perner et al. (2018).

bringing about –indeed, for themselves and others alike. So teleologists have an objective reason to realize such goals themselves and to expect others to realize them, too (they do not need to have an explicit notion of reasons as objective in this sense). Likewise, they treat means-end relations and circumstances conducive to realizing such goals as equally fact-like and objective (public, shared). Moreover, as reasons are linked to norms in that *one ought to do what one has good reasons to do*, teleologists also adopt a basic normative stance, evidenced in their protests when somebody does not do what he is supposed (expected) to do in the given situation or activity.[256]

Teleological sense-making strategy can thus be interpreted as capturing and elaborating the common-sense interpretive strategy according to which agents are supposed to do what there are reasons for doing. We may conceive of it as a kind of objectified, outward looking, evaluative intentional strategy (Dennett 1987) that does not invoke subjective reasons embodied in beliefs and desires. Of course, we, mature folk-psychologists endowed with language, can (and have opportunities to) make sense of one another in the latter way, too. Still, the teleological stance often works for us as well. At any event, the important suggestion in the present context is that young children may be only teleologists (and the same goes for our ancestors at some point; cf. Perner and Esken 2015). The teleological framework makes it possible to account for cooperative and communicative activities of such agents without overwhelming their minds.

To drive the point home, imagine two teleologists, X and Y, being co-present in a situation and interacting.[257] We can also assume that they take record of each other's experiences (engagements, encounterings or registrations). So it is mutually

[256] Perner and Esken (2015) appeal to the studies of Rakoczy and Schmidt (2013) that document second-personal protests (protonormative attitudes) of toddlers at around the second year (thus not yet third-personal normative attitudes supposed to reveal some understanding of generic, agent-neutral objective norms).

[257] This assumption may be problematic in the case of infants who collaborate and communicate with adults who are capable of more sophisticated sense-making strategies, which they may bring to bear to scaffold their young partners. But imagine, instead, that X and Y are hypothetical ancestral humans who have yet to evolve or construct full-blown folk-psychology. Pairs of three-year-old children would also do, though their collaborative and communicative activities are already mediated by language.

manifest to them that items in the intersection of their perceptual fields are mutually experienced/accessible and, in this sense, a sort of *common ground*. Suppose X treats some situation-related end-state as good, thus worth realizing: e.g., the state in which he will have bananas that are currently still on the tree (or table) over there. In so far as this feature (X getting bananas) is fact-like, public and shared, it gives not only X but also Y a reason to bring it about – e.g., by helping X to get bananas from the tree (or table). Indeed, X may expect this of Y. This explains why Y might help X or may work together with X toward realizing that end-state: e.g., collecting bananas for X if Y is better positioned (or competent) to collect them from the tree (table), or perhaps helping X to climb the tree. Communication, then, fits into this picture as a natural means of coordination and realizing goals so conceived. If X needs Y's collaboration, X might recruit Y via communication – e.g., by establishing attentional contact and pointing to bananas on the table over there. As reasons – concerning the desirability of bananas and opportunities and means of gathering them – are shared, this forms a natural common ground between them, even without X and Y having to meta-represent what each other (or both) know. Drawing on this common ground, Y can appreciate even without mentalizing X's signal as a means to reach the goal (treated as shared) and cooperatively respond by collecting bananas or otherwise helping.

These are nothing more and nothing less than tentative suggestions of how to minimize the mentalizing load required for prelinguistic intentional communication. There are other alternatives – e.g., *teleofunctional* and *expressivist* - designed to do without the baroque recursive structures posited by demanding Gricean interpretations of GAC.[258] The jury is out on which approach is most promising when it comes to modeling the structure and skills of prelinguistic communication. As Moore (2018b) remarks, current evidence regarding the development of prelinguistic and linguistic communication in children (due in part to Tomasello's research) highlights the key role of triadic communicative engagements (e.g., requestive or informative pointing) that involve ostensive aspects of intentionally addressing one's communicative performance (pointing) to others. Moore does not think that joint attention (at least in Tomasello's sense), not even pointing or *informative* intent, is necessary for minimal

[258] Cf. Millikan (1984), (2005), Bar-On (2013), (2019).

intentional communication as such. Some creatures (perhaps apes or perhaps our ancestors, at some stage) could ostensively address just some kinds of displays to others' attention without sharing attention with others, without specifically pointing to others or without informing others (they may just request things).[259] But these traits may be critical for the evolution or ontogeny of linguistic communication. The question is how best to interpret such engagements and in terms of what kind of skills: ranging from low-level sensorimotor abilities, through expressive behaviors, to mindreading short of full-blown mentalizing. It may turn out to be difficult for purely teleological, teleofunctional or expressivist accounts to plausibly explain such aspects (of flexible behavior) without positing some form of communicative intents requiring at least modest mindreading skills.[260] Or they may pull the rabbit out of the hat.

In any case, the point of this chapter has been to show that some such account is desirable if one wants a plausible developmental approach consistent with the available data.

## 7. Conclusion

My discussion in this chapter focused on Tomasello's views on joint intentionality as a package of intermediate social-cognitive capacities orchestrating preverbal and precultural social interaction and communication and paving the way to social-normative practices, linguistic communication and higher-level forms of thinking and reasoning. I assumed that his developmental approach promises to shed light on the psychological infrastructure that makes possible human practices of reason. In this respect, Tomasello's experimental research and data highlighting the critical role of early intersubjective - attentional, intentional, communicative - activities in the

[259] Gomés (1994), (2005) also suggests that ostensive addressing of signals (gestures, voices) to others' attention is a crucial feature of intentional communication, including apes' referential communication (gestures, perhaps also some calls). The difference is that Gomés thinks that joint attention (in his preferred sense) is required (and in evidence also in apes' communication). As I explained previously, his account of joint attentional activities is less demanding than Tomasello's. So there may be no real tension.

[260] See also Sabbagh and Baldwin (2005) for other experimental evidence interpreted as supporting the idea that some communicative intents on the part of communicators and sensitivity to them on the part of recipients characterizes early forms of human communication and facilitates word learning.

development of ever more complex forms of cognition and agency are suggestive and promising indeed. I argued, however, that the data should be interpreted cautiously if the developmental approach is to deliver its intended fruits. In particular, I attempted to make good the claim that interpretations intermediate between too lean (in terms of agents' understanding behavior divested of any mentality) and too rich (in terms of agents' rich mentalizing abilities) are best suited to serve the developmental approach.

So interpreted, intermediate forms of intersubjectivity and requisite cognitive or agential capacities are potential fillers of the gaps in the views of language rationalists. Tomasello deserves kudos for focusing our attention on them. I shall next argue that, when it comes to objective-propositional modes of cognition and thinking, his views resonate to a surprising extent with the views of prominent language rationalists.

# Chapter 6

## *Objective Thought*

### 1. Introduction

Language rationalists, I have said, emphasize person-level, self-conscious, reason-sensitive thought as a core feature of human sapience. We conceptually classify things in propositional judgments. Such classifications have *objective* conditions of correctness vis-à-vis external things classified, which determine in part the meaning (or conceptual content) of judgments. Moreover, we genuinely *grasp* those meanings to the extent that we know under what conditions one correctly classifies and misclassifies things, respectively, by making them. We also form, assess and adjust our judgments in light of what there is good evidence or reason to accept. And this involves some grip on evidential links between perceptions and thoughts and inferential relations between thoughts (coherence, support, etc.) manifested in person-level, reason-sensitive management of our cognitive and practical responses to the world. In fact, conceptual classification and reasoning penetrate each other, if concepts are individuated in part by such relations. Importantly, language rationalists usually agree that this kind of *objective-propositional thought* emerges only in the intersubjective setting of more subjects communicatively interacting and treating their sayings as responses to the shared world - indeed as expressing different perspectives on it, which can coincide or diverge and can get it right or wrong.

Admittedly, this line of reasoning is quite schematic and controversial. For one thing, different language rationalists have elaborated different conceptions of the

nature of and relation between intersubjective activities and objective thought. For another, other theorists regard it a non-starter. According to such opponents, there are both theoretical and empirical grounds for recognizing more basic forms of subjective experience or thought responding to objects, features, states or events in the objective world out there. Such experiences or thoughts are not only set up to be set off by worldly items whose physical presence (or absence) thinkers note and are capable of tracking as continuous through space and time. They represent them in a certain way and depend for their objective representational success on whether the item is that way. Such experiences/thoughts comprise the layer of intentionality that does not depend on language; rather, the layer of linguistic representations (intentionality) is based on it.[261]

On the one hand, this charge is deserved, in so far as language rationalists tend to flirt with the idea that all thought (*sensu stricto*) is objective-propositional and language-dependent. On the other hand, I think it misses their main concern. In one sense of that term, indeed, "objective" is applied to the spatiotemporal world and its contents, which is the way it is independently of particular experiences or representations of cognizing agents. So also experiences or cognitive states that enable agents to flexibly adjust their responses to such a world can be called "objective." Or better, I submit, *objectual*. Basic aspects of this may be differentiation of one's own body from other bodies (e.g., of stimuli coming from one's own body vs. from other bodies), awareness of oneself as spatially located vis-à-vis things or other agents, ability to track or re-identify things as permanent objects, etc.[262] I do not deny this level

[261] See Burge (2010) on the representational (but nonpropositional) character of perceptual experience and the conceptual-propositional contents of perceptual beliefs as deriving from them and being available also to infralinguals.

[262] This theme was explored in some depth and detail by Strawson (1959), (1966), who conceived of it as an enquiry into the basic structure and the most general features of our actual conceptual framework. Kant (1781) was deemed the most ingenious proponent of the idea that some awareness that different experiences concern constant spatiotemporal items is constitutive of objectual experience. Piaget (1951) and others empirically investigated the emergence, in infancy, of awareness of *object permanence* (objects continue to exist in space and time even when not experienced). At a very basic level, psychologists talk about the core cognitive skills of spatial and objectual cognition, which emerge early in infancy. Cf. Spelke (2003), Spelke and Kinzler (2007), Carey (2009). Recall also that Tomasello

of perception, cognition and thought, including basic forms of awareness of things, bodies, sorts or even kinds of selves. However, language rationalists are (mainly) after another beast:[263] without some grasp of the conditions of objective (in)correctness of that which is said (or thought), one does not really know what one means by one's utterances (or what one thinks). And this grasp goes well beyond basic forms of objectual cognition, though it may build on them.

An attractive, conciliatory approach, in my opinion, is to appreciate that *objectual* and *objective* thought, respectively, may occupy different ends of a scale of increasingly complex and flexible grades of cognition, whose intermediate grades are forms of intersubjective activity and cognition. As I read it, Tomasello's partly conceptual and partly empirical account of the emergence of *objective-reflective-normative* thought offers one attempt in this vein that is of particular interest. It puts forward a view of the nature of human objective thought and its intersubjective roots that aims to capture several features thereof stressed by language rationalists. It proposes that propositional, richly inferentially articulated thoughts come into being

---

(2014) subsumes such core cognitive (including social-cognitive) skills under individual intentionality that we share with primates; cognitively advanced animals may even perceive, imagine or expect fact-like situations or events and inferentially transform them, including protologically. See Butterfill (2020) for a discussion that distinguishes between core knowledge and knowledge proper. Unlike the former, which is to some extent "encapsulated", the later is inferentially integrated with other states in the cognitive decision-making economy of an intentional agent (or system).

[263] My reader may note that the previous concession distances me from those language rationalists who think that *all* awareness of sorts and even of particulars is (1) a conceptual matter and that (2) "…all awareness of sorts, resemblances, facts, etc… indeed, all awareness even of particulars - is a linguistic affair" (Sellars 1963, p. 160). Depending on one's conception of "concept," one may argue that there is a basic conceptual awareness of things and sorts that is prelinguistic, or that there are preconceptual forms of awareness of things and sorts. Sellars (1981, p. 336) himself later moderated his former views on the matter. According to the later Sellars, non-human animals think in the sense of representing something *as* something. So their thoughts (representations) need not lack a "propositional form" (referring to and characterizing something as something). But they lack a logical (truth-functional, quantificational) structure. That structure distinguishes the linguistic kind of conceptual thoughts, where concepts are partly individuated by the fact that they occur in logically structured (conditional, general) thoughts and inferences not only conform to, but are sensitive to general rules (being also increasingly self-conscious).

with linguistic practices, though they build on prelinguistic representations of fact-like situations with a proto-propositional (topic-focus, subject-predicate) structure. It conceives of it as objective in that it purports to get right the shared world that is external and independent. Finally, Tomasello contends that all this depends on intersubjective standards of objective correctness to which thinkers capable of thinking such thoughts must be duly sensitive.

In this concluding chapter, I want to capitalize on this interesting overlap in exploring what lessons we can learn about objective thought by comparing and coordinating the two theoretical perspectives. The views of Davidson and Brandom are picked out as two fruitful foci of comparison with Tomasello. Davidson's considerations about interpretive keying of verbal responses to a shared world as a condition of the possibility of objective thought serve as a natural point of departure, because they bring into sharper relief important commonalities and differences. Brandom's views develop Davidson's promissory idea within his social-pragmatist framework, which stresses the social-perspectival structure of discursive triangulation. Tomasello's account provides a more empirical perspective on the phenomenon of objective thought as rooted in the intersubjective abilities to take and coordinate perspectives.

I shall argue that Tomasello is right that prelinguistic triangulation already opens up the shared world, though falling short of establishing a full grasp of the contrast between the subjective and objective embodied in the notion of belief. On the other hand, I note that his account of the development of that grasp via taking part in *perspective-shifting discourse* has affinities to Brandom's account of objectivity as structural feature of the *social-perspectival discursive sense-making*. Exploring this common ground as well as differences, I propose the following diagnosis. Available empirical evidence indicates certain stages in the development of the child's grasp of objectivity as pertaining to both sayings and thoughts. And Tomasello may well be right that *exchanges of opposed views* on some topic facilitate the development, as they provide affordances to register conflicting perspectives on the shared world. However, I side with Brandom that a full grasp of objectivity as pertaining primarily to empirical discourse or thought requires that one also understands that no perspective is privileged by default and each is, in principle, fallible. And I argue that this grasp may well

require participation in simple *games of giving and asking for reasons*. I conclude by pointing out how this proposal fits the views developed in previous chapters.

## 2. Davidson on Triangulation and Objectivity

Davidson's view is part and parcel of his integrated conception of language, thought and action. There is no need to go into tedious details here. In the following, what matters is that Davidson illuminates the nature of intelligible (rational) activity (paradigmatically exemplified in linguistic activities) from the perspective of interpretive activities of sense-making. From that perspective, he maintains, propositional thought and talk are inextricably intertwined.[264]

One *a priori* argument for the interdependency of propositional thought and meaning surfaces in Davidson's account of *radical interpretation*. A radical interpreter of a community of speakers cannot interpret their utterances as meaning anything determinate unless, at the same time, he interprets them as intentional agents with propositional attitudes – beliefs, desires, intentions – related in certain *constitutively rational-normative* ways. For speakers may mean different things by their utterances depending on what they want to be the case or believe to be the case. At the same time, the interpreter cannot determine the contents of their thoughts without registering what sentences speakers hold true under what shared circumstances and, indeed, what other sentences they are prepared to hold true in relation to this.[265] He can make progress on this front only by charitably *maximizing agreement* between him and the alien speakers. Thus he expects speakers to be agents who form beliefs and desires and are capable of basic practical rationality. He also presumes that sentences that they hold true mostly express beliefs that are true and conform to the basic patterns of rationality and coherence (of course it would be a bad strategy to assume that speakers are correct or

[264] Davidson (1975).

[265] Interpreter X can register that Y holds "*p*" true without yet knowing what "*p*" means; for it is part of his evidence based on which he will eventually form a hypothesis (as well as test it) about the meaning of "*p*" in X's mouth. Relatedly, upon registering that X holds "*p*" true, Y may assume that X has some "*p*"-related belief, without being able to determine which belief is that by way of mapping "*p*" onto a sentence "*q*" that, according to his interpretive theory of X's behavior, means the same in Y's mouth as "*p*" means in X's mouth.

rational all the time). In this respect, our predicament does not differ from that of the radical interpreter. We make sense of one another as intentional-rational speakers and agents by attributing and calibrating both meanings and thoughts. Two consequences seem to follow from this. First, we should regard as futile attempts to derive (non-natural) linguistic meanings based on taking for granted propositional mental states.[266] Second, any attempt to apply our sense-making folk-psychological framework to creatures not capable of speech is bound to suffer from the problem of principal indeterminacy.

Even if we grant the conclusion about indeterminacy, this does not yet show that propositional thought as such depends on language. At best, it shows that, absent language, no evidence ever warrants interpretation of creatures in terms of thoughts with determinate propositional contents.

Davidson came up with other conceptual considerations that aim to establish that one cannot be a thinker of propositional thoughts unless one is an interpreter of another creature and notably of its speech. [267] At a minimum, he proposes, to be a thinker of propositional thoughts is to be capable of trafficking in conceptual *takings* on the external-independent world that can be correct or incorrect (*mis*takings). To *believe* something about the world is just to so relate to it. But, Davidson adds, one must also have a grip on this relation to (perspective on) the world as something that might get it right (being true) or wrong (being false). So objective-propositional thought

[266] *Pace* the so-called "Gricean program" of explaining linguistic (conventional) meaning in terms of (regularities in) speaker's meaning and the latter in terms of the content of propositional attitudes (which, some think, can be explained in terms of the content of mental representations). Davidson thought that Grice's analysis of the intentional structure of human communication was onto something. To make the best overall sense of alien speakers, a radical interpreter may need to proceed on the assumption that they intend their words to be interpreted by hearers in a certain way. Also, he suggested that the kind of triangulative sense-making capable of fixing determinate propositional meanings of utterances and thoughts has just that kind of structure: of speakers' intending to be interpreted by hearers in a certain way. But he did not think that the contents of propositional attitudes can be determined prior to and independently of determining the meanings of utterances (thus prior to verbal behavior and interpretation thereof).

[267] Davidson (1975), (1984).

– typified by beliefs so understood – are kind of self-conscious:

> […] someone cannot have a belief unless he understands the possibility of being mistaken, and this requires grasping the contrast between truth and error - true belief and false belief. (Davidson, 1975, p. 170)

Now, for Davidson, *belief*, *objective correctness*, *truth*, *error* are all interdependent notions. And one must have a grip on them for one to entertain and grasp objective-propositional thoughts. He argued that one can get a grip on this package only by taking part in *triangulative* interactions with other agents around external objects at which their shared (similar) responses intersect. In triangular interactions, agents monitor and coordinate one another's responses to a shared external situation. Based on this, then, they form expectations concerning relations between one another's responses and features of the situation so that they could notice discrepancies between (expected) responses and features of the situation. In this way, "the space is created" for the notion of *error*, which paves the way for understanding the fundamental intentional relation to (or perspective on) the world that is embodied in the notion of belief.

Yet, this is not the end of the matter. Davidson distinguished between two kinds of triangulation. The first kind (call it "animal") is available to non-linguistic creatures capable of monitoring and coordinating their responses to the world. This basic grade of triangulation is considered necessary for the possession of objective-propositional thoughts, because it creates the space for registering and keying similar responses to external objects or features at which they intersect; and, by the same token, also for the notion of error. Yet, it is not sufficient for the possession of objective-propositional thought. Only the second kind of linguistic triangulation (i.e., of verbal responses) is up to the task:

> […] unless the creatures can communicate, unless they can engage in the exchange of propositional contents, there is no way they can take cognitive advantage of their ability to triangulate their shared world. (Davidson, 2001, p. 13)

Here Davidson reasoned that only in the setting of triangulating specifically verbal responses is it possible to effectively co-relate responses with the particular

aspects of the shared world that fix what they (thoughts expressed by them) are about. Indeed, only from the particular perspective of an interpreter of another verbal response can one effectively disambiguate verbal responses as keyed to particular aspects of particular external targets (a would-be solitary thinker supposedly cannot do this, because she cannot have such a perspective on her own responses vis-à-vis the world). The notion of error also emerges in this context: when verbal responses fail to be correlated as they are expected to be correlated. Moreover, in triangulative contexts of the right sort the meanings of utterances and the contents of thoughts must be co-determined as part and parcel of one and the same sense-making enterprise.[268] If this reasoning is on the right track, pre- or non-linguistic creatures do not have a grip on error, thus objective correctness or belief. Even more radically, Davidson concluded that one is not a proper subject of the belief-relation unless one has a grip on such notions. In this (strict) sense, pre- or non-linguistic creatures are not believers, hence thinkers.

Davidson's (various) arguments are quite controversial, in part because he links them to his specific version of perceptual externalism, according to which empirical thoughts (or meanings) are about those external things or features that usually cause them (or utterances). One potential objection is that triangulation comes too late. Individuals must be prepared to rationally respond to their experience of the objectual world in order to understand themselves and others as subjects occupying different positions in space and having different angles on the things or situations in the intersection of their perceptual fields. Indeed, they must already know what they are responding to in order to be able to coordinate with others or spot discrepancies. Another objection is that one does not have to triangulate with others in order to develop a sense of (in)correctness, hence objectivity. Perhaps it is enough for one to track how things appear to oneself at different times and/or from different viewpoints, noting discrepancies between them and realizing that not all of them can get those things right. In addition, a *sense* of correctness may not require a *notion* thereof; perhaps an ability to update thoughts (expectations) when one's perceptions show the

[268] This is where a Gricean element enters Davidson's picture. He talks about „reflective" triangulation or interpretation.

reality to be otherwise is enough. Still another objection is that the argument begs the question. On the one hand, triangulation of sorts should shed light on the possibility of language and thought. On the other hand, we end up being told that the sought for triangulation is linguistic and, indeed, involves mutual interpretation in terms of propositional attitudes.[269] Also, Davidson`s uncompromising conclusion regarding the class of thinkers is rather problematic.[270] We shall return to that in due course.

At any rate, important for my discussion is that Davidson suggests that intersubjective triangulation of verbal responses – crucially involving the possibility of their discrepancy – grounds a grip on the subjective/objective contrast that characterizes objective-propositional thought. This idea influenced and was differently elaborated in two other approaches to be discussed.

## 3. Brandom on Objectivity as Structural Feature of Discursive Sense-Making

As intimated at the outset, Brandom concurs with Davidson that objective thought requires participation in linguistic interaction and endorses the idea that linguistic practice and hence intentionality

> [...] can be made intelligible only in the context of mutual interpretation - an *I-thou* relationship, in the current terminology. (Brandom, 1994, p. 659)

Because Brandom finds Davidson's considerations in support of this idea promissory yet schematic, he undertakes to put some flesh on it in his own "deontic" explication of mutual interpretation.

Recall that, according to Brandom, creatures producing and consuming propositionally contentful performances must take part in shared normative practices within which they treat sayings of one another as making appropriate (or not) other sayings (or non-verbal performances) and as being assessable as warranted (or not) by other sayings (or non-verbal circumstances). This basically amounts to treating them as moves in a space of reasons that are linked by normative relations of material

[269] See Claudine Verheggen's thoughtful discussion in Myers and Verheggen (2016) for a partial defense.

[270] Cf. Glock (2000), (2010).

implication and incompatibility (and non-inferentially linked to observation and action). The idea that social practices are required to create meaning-constitutive relations of this sort is derived from Wittgenstein's arguments to the effect that *rule-following* – here conceptual activities - is only possible when behavior and responses to behavior are socially coordinated so that the conceptual space is created for the distinction between *being taken to be correct* and *being correct*.[271] In the case of the game of giving and asking for reasons, Brandom explicates this in terms of a social practice of mutual attribution of normative statuses by virtue of normative attitudes that practitioners take toward performances of themselves and others. This is the *I-Thou* kind of sociality that he takes to be exemplified in the interpersonal activities of mutual attribution of assertional and inferential commitments and entitlements. And objectivity is reconstructed as a *structural feature* of such activities.

In Chapter 2 we saw that Brandom explicates the social practice of treating sayings as (primarily assertional) moves in a space of reasons in terms of treating them as generating and affecting normative statuses of commitment and entitlement, up to a point when certain inferential and incompatibility relations over such statuses are forged between them. At that point, speakers treat one another as acknowledging or undertaking inferentially individuated commitments (and entitlements) . They may or may not be entitled to such commitments in virtue of other commitments undertaken by them (upstream inferential dimension). They can be assessed and challenged on that score to vindicate or else retract their sayings. They also consequentially inherit other commitments, and they are precluded from others (downstream inferential dimension). In view of this, sayings may or may not be endorsed by others as sources of new information about the world (fodder for their own inferences). If speakers treat sayings in this manner, we can say that they take part in the assertoric practice, assertions being treated by them as implicit *knowledge claims* about the world, which may or may not be accepted.

---

[271] Wittgenstein (1953). Brandom reads Wittgenstein (and Sellars 1949) as rightly seeing that norms can constitute meaningful (conceptual) performances (as well as thoughts) only if basic norms (or proprieties) are implicit in the practice. In their primordial form, they are implicit in primitive normative attitudes of practically recognizing and treating (responding to) something as appropriate or not - without yet representing it as such.

Now to so treat sayings, if only practically, is to grasp, if only implicitly, that taking or saying that *p* is the case, and it being the case that *p*, are independent affairs; indeed, to grasp that the latter is a constraint on the objective correctness of the former. To implicitly claim to get things right (in asserting that *p* or in otherwise committing oneself to it being the case that *p*) is to claim for it a certain objective normative status. If that claim is not taken for granted (typically in situations of disagreement or incredulity on the part of interlocutors), that status should be vindicated in terms of independent, acceptable reasons (inferences) speaking in its favor.

In Brandom's framework, this fundamental difference constituting objective discourse reflects the *social-perspectival form* of discursive communication and interpretation. Even for empirical discourse (or thought) concerning the shared perceivable world, it is not enough to triangulate responses of one another just by keying them to causally relevant portions of the world as shared reliable differential responses to them. Brandom worries that this kind of triangulation cannot overcome the "relevant cause" problem that Davidson struggled with.[272] To interpret responses as propositionally contentful, one must also treat them as inferentially articulated: that is., not only as response-kinds appropriate in shared perceivable situations of a certain kind, but as licensing or excluding other response-kinds. This kind of interpretation is holistic and social-perspectival. In general, whether or not one takes "*P*" as a reason for (or against) "*Q*" depends on what else one also accepts – one's collateral commitments serving as auxiliary hypotheses. Because this background varies interpersonally (as well as intrapersonally across time), so do interpretations of what verbal responses produced by somebody mean. In communicative triangulation, therefore, speakers track and take different perspectives from within which they ("I"-

[272] Brandom discusses the issue as it arises in Dretske (1981). He argues that Dretske lacks resources to solve the problem. Though he does not buy Davidson`s own causal version of perceptual externalism either, there is the following point of contact. On Davidson`s view, recall, *primitive* triangulation only creates the space for solving the problem of fixing the semantically relevant part of the world as the last common cause of shared/similar responses of triangulating creatures. It is only in the intersubjective setting of *reflective* triangulation, producing an interpreting intentional speech as meant to be interpreted in certain ways, that they really pull the trick out of the hat. What Brandom can be interpreted as doing is showing that triangulation up to this task must forge inferential-normative links between responses.

s) and others ("Thou"-s) conceptualize the world and navigate across them to accommodate differences and exploit each other as sources of information about the world.

To shed further light on this social-perspectival form of discourse, Brandom says that discoursing agents keep score on their commitments and entitlements in "two sets of books" and translate back and forth between them. First, as scorekeepers, they attribute to other speakers commitments that they take them to *acknowledge* in their sayings (or presume in their practical inferences). This way, they keep score on what speakers take themselves to be committed (or entitled) to, against the backdrop of collateral commitments that speakers acknowledged or otherwise avowed. This is roughly scorekeepers' take on speakers' take on the world. Second, scorekeepers acknowledge commitments (or entitlements) of their own, which constitute their take on the world. They bring it to bear in assessing speakers in terms of what they are *really* committed to hold because there are reasons to hold it, though speakers may not acknowledge such commitments themselves. Due to switching back and forth between these two perspectives, grounded in different sets of collateral commitments, scorekeepers may assess speakers as acknowledging what they ought not to; or as not acknowledging what they ought to. But this is not sufficient to grasp the difference between subjective attitude and objective status. Not until they recognize that the distinction gets a grip in *anyone*'s, including *their own* case: grasping that no one's first-person take on the world has any special privilege in this respect, being symmetrically assessable, from within another person's ("Thou") perspective, as correct or not. This involves recognition of symmetry: the way I take things to really be (as opposed to how things subjectively appear to you) may be to you just how things subjectively appear to me (as opposed to how things really are, according to you). This insight is mediated by interpreting others and recognizing that they do just the same with respect to oneself; specifically recognizing that others also keep such "double books" on oneself. Generalizing on this, a sense emerges that what is correct to claim or infer may outrun, hence does not coincide with, what *anyone* takes to be correct to claim or infer.

In this sense, objectivity is said to be a structural feature of discursive sense-making: within each interpretive perspective, a distinction is registered between the

conditions under which concepts correctly apply and the conditions under which they are taken to correctly apply. A grip on this distinction requires taking part in the kind of interpersonal exchange and assessment of verbal responses embodied in the game of giving and asking for reasons. Emphatically, however, this does not require that speakers agree on where to draw the difference:

> What is shared by all discursive perspectives is *that* there is a difference between what is objectively correct in the way of concept application and what is merely taken to be so, not *what* it is - the structure, not the content. (Brandom, 1994, p. 660)

The dimension and sense of objectivity is at first nascent in practices of scorekeeping. Up to a point, that is, scorekeepers can play the game of giving and asking for reasons without making it explicit. Or, what boils down to the same, without having and bringing to bear the explicit notion of objectivity. The notion of *belief* – as a take on the independent world that can be a *mis*take – comprises both sides of the subjective/objective contrast. But this notion is also only implicit. In one sense, belief is a doxastic perspective on the world that is practically attributable to agents based on their acknowledgement of a corresponding assertional commitment. In another sense, beliefs are assertional commitments attributable based on subject's other acknowledged commitments even when subject himself may not acknowledge the former as following from the latter. At the point when scorekeepers keep the two sets of books (attribute commitments that outrun those acknowledged by others) and recognize self-other symmetry, we can say that they are capable of objective-propositional talk and thought, including having both kinds of beliefs. Nevertheless, they do not yet need metacapacities to entertain *explicit scorekeeping attitudes* with contents to the effect that someone is committed (or entitled) to or believes something.

> The logical locutions whose expressive role is to make the adoption of such pragmatic attitudes explicit in the form of claimable contents — propositional-attitude-ascribing vocabulary such as the regimented " ... is committed to the claim that ... " or its vernacular correlate " ... believes that ... " — form an optional superstratum whose expressive role can be understood in terms of what is implicit in ground-level linguistic practice, but which is not required for, or presupposed by, such practice. (Ibid., p. 629)

But once scorekeepers develop such expressive abilities and devices, they transit to semantic and normative self-consciousness.[273] Famously, Brandom explains the idioms for *ascribing* commitments (modeling beliefs) in *de re* vs. *de dicto* style as devices serving to make explicit both the difference between perspectives from which sayings and thoughts can be assessed and their representational dimension (or objective purport) that was previously only implicit in the discourse.[274] Then, we can say, the objective dimension of linguistic intentionality – standards of correct conceptualization of represented things becomes fully explicit.

Brandom's account of discourse and thought governed by objective norms is much more complex.[275] Like Davidson's arguments from triangulation, it is not beyond the pale. In particular, Brandom maintains that before scorekeepers elaborate aforementioned expressive devices they can practically treat/assess sayings and other performances as effecting changes in normative statuses - up to reaching a threshold point of treating them as contentful. But they cannot yet attribute (and self-attribute) attitudes as such. This is problematic if combined with the claim that such creatures are already capable of making *assertions* expressing determinate claims about the

[273] Cf. Brandom (1994, chapter 8).

[274] Scorekeeper's *de dicto* ("X believes that F(t)") ascriptions perspectivize the content of attributed commitment as it could be acknowledged by the attributee - given his standpoint and collateral commitments (as they are recorded by the attributor). On the other hand, *de re* ascriptions ("X believes of t that F(t)") explicitly perspectivize the content (with an objective purport) in part from the standpoint of the attributor (by substituting in the scope of "of" terms based on the attributor's collateral commitments).

[275] Brandom (1994, chapter 8). It culminates with "objectivity proofs" (Brandom 1994, chapter 8). They are supposed to show that speakers capable of keeping two sets of books on others, and recognizing that others keep two sets of books on them too, are in a position to recognize that contentful statuses depend for their objective correctness on what is the case anyway, independently of what *anyone* takes to be correct. The details need not detain us here; but the proof aims to show that scorekeepers do so by recognizing that "I claim that *p*" and "*p*" are inferentially non-equivalent in virtue of being able to take a third person perspective of potential interlocutors who keep on them two sets of books (as cashed out in *de re* vs. *de dicto* style attributions or assessments). If so, their practices register that „contents of ordinary claims . . . are not equivalent to those of any claims about who is committed to what" (Brandom 1994, p. 606). Which, presumably, is a desirable consequence that overcomes the problem confronting theories that straightforwardly equate contents of sayings with their assertibility conditions.

external world, being correct or incorrect accordingly. For this kind of objective discourse (and thought) requires, according to Brandom himself, some grasp (if only implicit) of the objective conditions of correctness of sayings, hence of the distinction between what someone *takes* oneself to be committed to (commitments attributed *as acknowledged*) and what he is really committed to (commitments attributed *as undertaken* or to be acknowledged). Indeed, speakers must appreciate that others adopt this perspective on them too. The problem is that it is hard to see how this can be achieved other than without somehow tracking and taking into account such attitudes themselves (of oneself and others). A *via media* may be to allow that there is a way of taking account of attitudes (perspectives) that does not yet require possession of explicit notions for them. Next sections intimate such an account.[276]

For my dialectical purposes, however, enough has been said to see how it develops Davidson's promissory remarks on the roots of the notion of objectivity in triangulation:

> It emerges only in the context of interpretation - that is, discursive scorekeeping - because that is the practical activity in which the commitments acknowledged (held true) by one interlocutor are compared and contrasted with those acknowledged (held true) by another, the scorekeeper who attributes the first set. (Ibid., p. 599)

## 3. Tomasello: From Perspective Taking to Grasping Objectivity

Tomasello's approach has affinities to both accounts. He concurs that perspectives can intersect in the shared world only in the context of intersubjective (triadic) activities. He, too, sees this as based on *conceptual* grounds. But his views mostly concern dependency in the *genetic* sense. They materialize in his account of the social-cognitive development of the notion of belief (comprising the two sides of subjectivity and objectivity), which hinges on his interpretation of *false-belief tasks* (hereafter FB-tasks). So I have to say something about this issue first.

[276] Cf. Laurier (2007).

The pioneering study testing false-belief understanding in preschoolers is that of Wimmer and Perner (1983).[277] In their *displacement* (*unexpected transfer*) *task*, children were told and watched the following kind of story involving Maxi (the puppet) and his Mother. Maxi placed his bar of chocolate into a drawer and then left the room for a while. Meanwhile, Mother moved the chocolate from the drawer into a cupboard. Having watched (being told) all this, the child was then asked: Where will Maxi look for the chocolate when he comes back?[278] If the child understood that Maxi is mistaken about the item's location, he/she should have responded that Maxi will look for it in the drawer. This is where Maxi had placed it before his Mother relocated it unbeknownst to Maxi; so that is where Maxi still believes (mistakenly) it to be. At what age do children grasp this? Children below 4 years consistently responded that Maxi will look for the item in the cupboard, where they themselves knew it to be hidden by Mother. Only older children between 4 and 5 years tended to give the right answer.

Since then, classical FB-tasks (also called direct or explicit) have been tested in various modifications and on various populations. And the original pattern has been consistently replicated.[279] Moreover, this seems to be a remarkably robust phenomenon, as children begin to pass a number of different but related tasks at around the same age. In *unexpected contents* tasks, the child is shown a familiar candy box ("Smarties") and is asked what he/she thinks the box contains. Unsurprisingly, the typical answer is: "Smarties." But the child is then shown that the box contains pencils. The child is asked what another child — who has not seen the real contents of the box — thinks the box contains. Children reliably succeed — saying "Smarties" rather than "Pencils" — only at the age of 4 to 5 years.[280] In a variant of this task, the issue is whether children would acknowledge that their initial belief about the contents of the

[277] Baron-Cohen et al. (1985) is another pioneering study. The landmark paper of Premack and Woodruff (1978) kicked off the boom of "theory of mind" research, including comparative studies.

[278] In some conditions, children were asked where Maxi *thinks* the item is, instead of asking where Maxi will look for it. This made no difference.

[279] See Welmann et al. (2001) for an authoritative meta-analysis.

[280] Cf. Gopnik and Astington (1988).

candy box was mistaken. The experimenter again shows the unexpected contents of the box, closes it and then asks the child what he/she originally thought to be in the box. If the child can dissociate its current (true) belief from its previous (false) belief, it should answer "Smarties," otherwise "Pencils." Again, children reliably succeed in this task between 4 to 5 years. *Appearance-reality* tasks use scenarios such as the following.[281] The child watches a scene in which a red car moves behind a transparent plastic filter that makes it appear black. The child is asked: "What color is the car? Red or black?" Even after the experimenter explains "I do not want you to say what color the car appears to be but what color it really is," 3-year-olds respond, "black." Children reliably give correct answers only from between 4 to 6 years.[282]

According to the *orthodox view*, understanding false belief is the measure of (*representational*) *theory of mind*, and the gold standard of understanding false belief is success in classical FB-tasks. The findings reviewed above convinced most researchers that children begin to understand false beliefs between 4 and 5 years (some studies indicate 3.5 years). At this point, a more sophisticated understanding of others as intentional agents with a different and potentially mistaken perspective on the world comes online.

There are issues, though. Back in the 1990s it was found that three-year-olds perform better at non-verbal variants of FB-tasks – e.g., looking in anticipation where Maxi should look if Maxi had a mistaken belief about the location of the displaced item.[283] Recently, there has been a boom of such indirect (implicit) false-belief tasks using *non-verbal measures*, which might be administered to prelinguistic infants. Pioneering studies with infants used the measure of *violation of expectation*: when the actor reappears on the scene, would infants (in their second year) exhibit a tendency

[281] Flavell (1986).

[282] And the findings from *Level 2 visual perspective tasks* that I already mentioned complete this picture.

[283] Cf. Clements and Perner (1994). Children did this only in the false belief condition, but not in the true belief condition in which actor witnessed the relocation of the item. But when asked, they still replied that actor would go to the location to which the item was transferred as if they were *unaware* of the possibility that actor might end up in the location at which their own anticipatory looks were directed. Cf. Garnham and Ruffman (2001) and Ruffman et al. (2001).

to look longer (violation of expectation) when he searches the box in which they know it to be hidden (rather than in the box where the actor last saw the puppet before it was relocated). If so, this may indicate that the child expects the actor to act consistent with his false belief. Some studies found this pattern.[284]

Other studies used the measure of *anticipatory looking*: when the actor reappears on the scene, would infants exhibit a tendency to look in anticipation to the box in which the actor last saw the puppet before it was relocated to the other box in his absence (rather than to the box in which they know it to be hidden)? If so, this may likewise indicate that the child expects the actor to act consistent with his false belief. Again, some studies found this pattern.[285].

These advances pose a challenge to the orthodox view and raise a number of issues that are currently hotly discussed.[286] Do implicit FB-tasks show us that children younger than 4 years (even infants!) understand something about the logic of false belief after all? If so, what exactly is it that they grasp such that it helps them to pass those tasks? And what, for that matter, prevents them from passing explicit FB-tasks? Is it, perhaps, that young children already possess the notion of belief but the extra task demands – language-processing, ecologically invalid scenarios or executive function demands – imposed by classical FB-tasks mask their understanding, being too challenging at this age? Or is it, rather, that infants' success can be accounted for in terms of their forming expectations about actors' behavior based on representing or tracking what and where actors have (not) witnessed? Whereas three-year-olds may draw on implicit and partial grasp of belief, not understanding that others may view the world contrary to how they view it, and only older children are capable of that kind of grasp?

---

[284] Onishi and Baillargeon (2005), Surian et al. (2007), Baillargeon et al. (2010).

[285] Cf. Southgate et al. (2007). Moreover, Tomasello and colleagues devised versions of non-verbal paradigms that even apes passed. Krupenye et al. (2016), Buttelmann et al. (2017).

[286] Of late, a replication crisis has been reported in this area. Cf. Kulke and Rakoczy (2018), Poulin-Dubois et al. (2018).

Different researchers have different answers to these questions. Interpretations of the first type challenge the orthodox view, whereas interpretations of the second type are consistent with it. Tomasello's own diagnosis seems to be of this second type.

Tomasello concedes to the first interpretation that implicit measures tap into infants' mindreading skills of sorts. But he concurs with the second interpretation that they do not show that infants pass them because they already grasp the logic of (false) belief as such. Instead, infants' success can be accounted for in terms of their forming expectations due to tracking what and where actors have (not) witnessed. This may not require any mindreading skills beyond those that belong to perception-goal psychology (of individual intentionality).[287] Based on tracking such simple states, they form expectations about actors' behavior *as if* representing their (false) beliefs. To really understand false beliefs, however, they would have to assess the perspective of actors in light of their own perspective or informational state. We have no evidence that this is what they are (capable of) doing; and implicit tasks can be passed without doing it.

[287] Because apes, too, possess versions of such social-cognitive skills, Tomasello thinks that their recent success in implicit FB-tasks can be accounted for similarly. Compare Tomasello (2018). Note, however, that his explanation should come to terms with the question of why apes have consistently failed to pass similar non-verbal tasks in the past, given that they possess abilities to understand what others see/do not see, have/haven't seen. Cf. Martin and Santos (2016). For instance, in the Hare et al. (2001) study, subordinate chimps did not seem to distinguish between the condition in which dominant chimps were ignorant of the location of the reward (because they had not witnessed it to be located behind a barrier) and the condition in which they were mistaken (because the reward that they had witnessed to be placed behind one barrier was relocated behind another barrier during their absence). The difference between the two conditions is that, in the first, there is no safe basis to predict a dominant chimp's behavior after he re-enters the scene. If subordinates understand this, we may expect a random pattern in their reward-seeking choices, not a consistent preference for one location. But not so in the second condition. Yet subordinates did not display a consistent preference for the true location of the reward where mistaken dominants presumably would not seek it. The pattern was random just like in the first condition. They did not seem to discriminate between being unaware of something and false belief. It won't do to retort that the new tasks are ecologically (more) valid, since competitive paradigms were advertised by Tomasello and colleagues as ecologically valid (compared to cooperative paradigms). Both kinds of tasks seem equally implicit.

Tomasello proposes that the key is the development of skills to take and coordinate different perspectives on the world. In a very broad and loose sense, even infants passing non-verbal tasks exhibit "implicit" sensitivity to others' (perceptual, epistemic) perspectives, because they track what others have (not) witnessed and hence what others sort of know and are ignorant of. But this does not yet involve any awareness on their part of different perspectives on the shared world. That kind of sensitivity – which apes seem to lack – develops with their precocious skills of joint attention and intentionality. The process may start at around their first birthday with basic forms of *social perspective taking*: registering/tracking differences in attentional foci and wanting to align them in joint attention, keeping track of what others have experienced (engaged with) particularly within shared activities, including expecting this to be a sort of common ground in referential, informative or requestive communication. Late in the second year emerge the skills of Level 1 visual perspective taking (recognition that co-present others may not see *what* they see); and still later, at around the third birthday, emerge intermediate forms of Level 2 visual perspective taking (sensitivity to *how* objects visually appear to others when this differs from how the same objects appear to themselves).[288] But these forms of visual perspective taking do not yet require children to hold in mind their own perspective and confront others' perspective with it. When tasks are modified so as to prompt them to do this, even three-year-olds are at a loss. Classical tasks of Level 2 visual perspective taking – tapping such skills - are passed by children only from between 4 to 5 years, when they also pass explicit FB-tasks and appearance-reality tasks. The common denominator of all these tasks thus may be a maturing capacity to compare other perspectives with one's own and confront both with the objective perspective, as opposed to being merely able to implicitly take, align and shift between different perspectives.

This proposal aims at explaining three sets of data.

First, it is often suggested that in implicit FB-tasks the child's own perspective on the situation is backgrounded. Tomasello thinks that, just because of this, there is no confrontation and coordination of different perspectives, hence no grip on false belief as such.

[288] Moll and Tomasello (2007b), Moll and Meltzoff (2011), Moll et al. (2013)

Second, how come infants can pass implicit measures of false belief, whereas three-year-olds consistently (not randomly!) give incorrect answers in explicit FB-tasks? Indeed, if infants' success can be accounted for in terms of their forming expectations based on tracking what actors have witnessed and where, why do three-year-olds consistently give incorrect answers in explicit FB-tasks, rather than using the same social-cognitive abilities to pass them?

Here Tomasello seems to have two things to say. One is that explicit tasks trigger explicit thinking and foreground subject's (the child's) own perspective on the situation; but to pass them, he should also view the situation from actor's different conflicting perspective. Three-year-olds are impeded because they cannot yet simultaneously take such different conflicting perspectives on the same situation. Another thing Tomasello says is that three-year-olds are becoming groupminded and sensitive to "objective perspective." They start to think in terms of facts out there for anyone to recognize, conventions or standards valid for anyone. They may first equate it with their group's perspective – generic knowledge of "us" about the world, conventions and standards of how "we" do things or are supposed to do things – mediated for them by knowledgeable, competent adults. This would be a nascent and implicit grasp without a full grip on the subjective/objective contrast.[289] A tendency of three-year-olds to prioritize (overproject) this perspective could explain why, in classical FB-tasks, their responses are reality-biased. In this way, their consistent failure is explicable. Or so Tomasello says (I shall come back to this).

Third, the success of four- to five-year-olds in explicit FB (and related) tasks is explained in terms of their maturing capacity to confront discrepant subjective perspectives with one another and with an objective perspective and to coordinate them. It was suggested in the literature that what prevents younger children from thinking of the situation from the viewpoint of the actor is their inability to suppress their own perspective on reality. Yet Tomasello does not regard the talk about suppression illuminating.[290] For when we understand others as having mistaken beliefs we do not actually suppress our own take on the reality. We are aware of it, whilst

[289] See also Tomasello (2018a).

[290] See O'Madagain and Tomasello (2019).

being aware that the take of others is different and potentially or actually in conflict with it. After all, we are aware that both others' and our own take on the reality may not match it; but, if we are rational, we also usually think that some considerations (evidence, reasons) count in our favor. So perhaps older children develop just this capacity, which younger children lack. Increased executive function, correlating with better performance in classical FB-tasks, is implicated in this. It may enable children to simultaneously represent and compare different perspectives whilst accommodating potential conflicts between them.

Importantly for my discussion, Tomasello contends that linguistic interaction is a crucial force in the child's cognitive progress. Regarding explicit verbal FB-tasks, it is not so surprising to submit that language development has a role to play in the development of folk-psychological skills. Statistical, correlational and training studies all indicate its role.[291] Other studies found that deaf children belated in mastering (sign) language tend to be belated also in acquiring the skills required to pass explicit FB-tasks. There is also a notable difference in this respect between deaf children born to non-deaf parents (signing not at all or poorly) and deaf children born to deaf but fluently signing parents. But there is no consensus on which aspects – syntactic, semantic, pragmatic, social or some mixture thereof – contribute to this. Obviously, early exposure to the mental talk and narratives helps; but it is less clear why and how exactly it helps. Tomasello's own diagnosis is that the main facilitators are those aspects of talk that require or hone abilities to confront and coordinate different (including conflicting) perspectives.[292]

Which aspects? Some theorists suggest that the crucial facilitator of false belief understanding (as tested in classical FB-tasks) is specifically the mastery of propositional-attitude constructions taking sentential complements.[293] This "syntactic

[291] Cf. Olson (1988), Astington and Jenkins (1999), de Villiers and de Villiers (2000), Ruffman et al. (2002), Hale and Tager-Fusberg (2003), Lohmann and Tomasello (2003).

[292] See Peterson and Siegal (2000), Woolfe et al. (2002), Pyers et al. (2009).

[293] Cf. de Villiers and de Villiers (2000).

hypothesis" has been challenged.[294] Still, Tomasello thinks that such constructions make it possible to perspicuously represent, in a single format, others as having a perspective on an independent situation that may be a *mis*perspective. But this insight as such is not dependent on the mastery of such locutions in particular. Rather, the propositional-attitude talk is best viewed as a member of a family of *perspective-shifting discourse*, which may or may not involve mental verbs. Of special importance are turn-taking interactions in which interlocutors jointly focus on a claim (the topic) whilst exchanging different, including conflicting attitudes (perspectives) regarding that claim. The following exchange exemplifies the underlying structure:

> Child: "Look, Mom. There is our tomcat."
>
> Mother: "No. It's not." (or, more specifically, "Never! It's our neighbors' kitten.")

This kind of discourse is said to have a dual-level structure of joint attention to a claim (made by child) with different attitudes toward it, in particular endorsement (child) and denial thereof (mother). The claim serves as the topic of the discourse. If such dialogues are conducted with preschoolers, the part or aspect of the world that the claim conceptualizes is usually something that is perceived or at least can be perceived or imagined by the child. Indeed, the world is already shared through joint attention, common ground, etc. But, here, the joint focus is specifically directed at the claim that embodies a particular conceptual perspective on it. Such dialogues therefore involve taking of attitudes or perspectives toward perspectives on the world. Those attitudes or perspectives are not just different but conflicting (being marked as such – here by Mother). Thus, this kind of discourse involves confrontation of perspectives.

Now, Tomasello suggests that only by taking part in such discourses may children come to appreciate that the world can be represented from different subjective perspectives (including their own) but is independent of them, so that any of them may actually misrepresent it. To wit:

---

[294] Perner et al. (2003) argue that, in German, "will" is an equivalent of "want"; and, unlike the latter, it takes that-clauses. But early exposure to and mastery of such construction was not found to predict success in FB-tasks.

> The exchange of perspectives in linguistic discourse—the partners jointly attend to the mental content of both the linguistically expressed topic and each other's comments— is necessary, we would argue, for the child to distinguish between the situation as it is objectively and the situation as each of them believes it to be. (Tomasello, 2018, p. 67)

Tomasello claims that there is some empirical support for this view. Lohmann and Tomasello (2003) report that training three-year-olds specifically in perspective-shifting discourse (revolving around situations that involved experience with deceptive objects, e.g. an eraser looking like a chocolate) helped to improve their subsequent performance in classical FB-tasks (before the training their performance had been poor). The most efficient training condition was one that exposed children to propositional attitude discourse about deceptive objects, where propositional attitudes were in conflict. That said, even training in discourse involving conflicting attitudes not marked by propositional attitude verbs proved efficient, compared to the control „no language condition" in which children had just experience with deceptive objects. Indeed, it was no less efficient than training in propositional attitude discourse that did not involve conflicting attitudes. This seems to support the hypothesis that a grasp of the subjective/objective contrast depends (in the genetic sense) on experience with communicative situations structured by joint attention to claims (or claimable contents) and involving disagreement (exchange of conflicting attitudes to claims).[295]

Summing up, Tomasello sides with Davidson and Brandom that objective-reflective-normative thought requires a grip on the subjective/objective contrast

[295] See O'Madagain and Tomasello (2019). Alternative interpretations are available, though. Perhaps children`s folk-psychological competence with attributions of *beliefs* derives from their mastery of simple language games of asserting, denying, etc. Once they are familiarized with communicative exchanges of simple affirmations and denials of claims, they might proceed to understand others` beliefs in terms of their potential assertoric contributions to an up-and-running conversation with others (cf. Gauker 2002, Van Cleave and Gauker 2010, Gauker 2020) or in terms of their assertional commitments (cf. Jary 2010, 2018, inspired by Brandom 1994). Indeed, they might first understand something about *indirect speech ascriptions* ("X said that *p*"), which helps them later to produce and understand *belief ascriptions* ("X thinks/believes that *p*). See, in particular, Geurts (*unpublished manuscript*). In the concluding part of this chapter I sketch a hybrid view that combines aspects of both these approaches.

embodied in the notion of belief. Taking a developmental perspective, he argues that it depends on understanding different, including discrepant perspectives on the shared but independent objective world, specifically in the context of discursive exchanges that induce one to register disagreement of perspectives.

We are now in a position to engage in dialogue our two language rationalists and Tomasello.

## 5. Coordinating Theoretical Perspectives

### *5.1. First Comparison: Triangulation, Intersubjectivity and Thought*

We have seen that Davidson and Tomasello both emphasize the crucial role of triangulating communicative exchanges in the development of the idea of objectivity, whose grasp is taken to be required for objective thinking (reasoning). Triangulative sense-making within communication establishes the shared world as the point of intersection of different individual perspectives. It creates the space for appreciating not only that perspectives may differ from each other, but also that they answer for their correctness (truth) to something independent yet shared (intersubjective). As Tomasello puts it:

> To understand the distinction between subjective and objective, an individual must triangulate (to use the term of Davidson 2001) on a shared situation with another individual at the same moment: we both see *X*, but you see it this way, and I see it that way. (Tomasello, 2018, p. 45)

One main difference is that Tomasello thinks that he can offer an illuminating reconstruction of how this insight *develops*, building on more basic social, cognitive and communicative skills. So he attempts to do what Davidson regarded conceptually impossible: to map the terrain of intermediate cognitive stages between the stage at which there is no thought at all and the stage at which there is propositional-objective thought. Davidson may yet be right that a full grip on the contrast between subjective perspectives and objective reality – embodied in the notion of belief - emerges only in the context of mutual exchange, assessment and coordination of verbal utterances. But he does not seriously ponder the possibility of intermediate forms of triangulation and cognition. What he does recognize are "primitive" forms of triangulation (available also to animals):

> […] the mutual and simultaneous responses of two or more creatures to common distal stimuli and to one another's responses […] (Davidson, 2001, xv).

Yet Tomasello documents that there is a rich layer of triangulations between primitive and linguistic triangulation of propositionally articulated utterances. As he interprets them, they involve interacting agents aligning attentional perspectives (gestural communication) and later also exchanging and coordinating conceptual perspectives (turn-taking exchanges of words/phrases that perspectivize objects/situations in particular ways). One (the child up to 4 years) may do this without yet grasping the subjective/objective contrast embodied in the notion of belief. The development of that grasp builds on all these intersubjective skills, but it requires coordination of (really or seemingly) conflicting perspectives on the world. Linguistic triangulation, specifically perspective-shifting discourse, is the setting for this. Propositional-attitude constructions help to explicitly express it in a perspicuous format.

A Davidsonian may retort that subjectivity and objectivity are interdependent notions that must be grasped together. As one cannot grasp the notion of appearance without grasping the notion of reality (and the other way round), so one cannot have a grip on subjective perspective without having a grip on objective reality (and the other way round) that it is a perspective on and that it purports to get right. So Tomasello's talk about grasping something about different perspectives before having a full grip on the subjective/objective contrast is problematic.

However, is it really plausible to contend that the subjective-objective contrast dawns on a child in a single cognitive enlightenment, rather than gradually, through a sequence of developmental stages? If the developmentalist is careful not to overinterpret cognitive upgrades, he may paint an illuminating picture. As Tomasello suggests, joint attention and communicative and collaborative triangulations open up the shared world of objects or situations that is a fit target of referential and proto-characterizing acts and affords for learning words. The shared conceptual world is opened up for the child only later through linguistic triangulations. Each stage involves sensitivity to perspectives. Tomasello proposes to capture the differences between them in terms of taking and aligning perspectives on the one hand and confronting and coordinating perspectives on the other hand. Early tracking of differences in

perspectives may consist in such things as registering that attention is not aligned and trying to attract and align it (joint attention). The child is also sensitive to different emotional attitudes or to what is now relevant or new to his partner in light of what has been jointly experienced before. All these may be called sensitivities to different perspectives. On the other hand, it remains true that in so far as *subjective* requires *objective*, and *vice versa*, the young child does not yet (fully or explicitly) understand perspectives as such. However, he eventually develops this insight through engaging in perspective-shifting discourse.

Another difference concerns a broader view of thought in general and belief in particular. Recall that Davidson maintained that to be a believer one has to grasp the subjective/objective contrast embodied in the notion of belief. Because he thought that one can grasp this contrast only if one is an interpreter of the speech of others, he concluded that neither animals nor infants are believers, thus thinkers. True, he focused on "propositional" thoughts. But he believed in a gap between that kind of "thought" (prerogative of discoursing creatures) and "no thought" that cannot be mapped because we lack appropriate vocabulary to describe intermediate stages. Tomasello opens up a way of viewing the situation in a more nuanced manner, allowing us to see both continuities and discontinuities, including the human-unique objective-propositional thought. On the one hand, he agrees that grasp of the subjective-objective contrast depends on linguistic triangulation. Because he thinks that objective thought depends on that understanding, he concurs that it depends on language. On the other hand, speechless critters are capable of nontrivial cognition and can be classified as believers of sorts.

Expressed in Dennett's terminology[296], Tomasello is suggesting that there are "real patterns" in the behavior of speechless critters that can be captured only if we attribute to them informational states about features of their environment relevant to their goals and such that the actual state of the environment may frustrate them (e.g., unfulfilled expectations). They may originate in perception, but they are not stimuli-bound and mediate between perceptual stimuli and goal-directed behavior by interacting with its motivational states. They are updateable in light of new

[296] Dennett (1987).

information. And they help explain flexible behavior beyond reflexive, instinctive or conditioned responses to stimuli. This encourages the idea that such informational states (e.g., animal expectations) are in mentioned respects sufficiently belief-like to warrant labeling them beliefs of sorts. This is certainly appealing in the case of apes and infants who are not only flexible intentional agents who understand something about causal relations and manipulate the world accordingly, but seem to be flexible in part due to being capable of understanding something about their abilities and intentional aspects of behavior. Absent language, creatures may not be capable of explicitly representing and reasoning about beliefs in particular. Also, we may be warranted to attribute to them perhaps only simple thoughts in terms of structure and content. Still, we can distinguish various grades of belief depending on how fine-grained information and in what kind of representational format such states bear and what grasp (if any) organisms have of themselves or others as possessors of such states.

For instance, some flexible behavior might be best explained by attributing to critters informational states decoupled from reality (e.g., to explain phenomena of deception, simple surprises, etc.). Those could be simple believers, since they can be in informational states that can match or fail to match reality. But there may be no need or evidence to posit any awareness of any of that on the part of critters. Higher grades may be represented by critters who not only form and update simple beliefs of sorts but also track some aspects of beliefs. They may track or represent others' goals, perceptual access or, perhaps, simple knowledge states. Yet, they may not track or represent others as having a take on the situation out there that may be mistaken. So they do not yet have a grip on the notion of belief or objectivity. At most, they are sensitive to aspects of beliefs that overlap with perceptual access or simple knowledge (they may indirectly, often reliably track beliefs by tracking perceptual states without representing them as beliefs).[297] A yet higher grade is reserved for creatures capable

[297] Consider apes. Tomasello is adamant that they are flexible thinkers who pursue their reference goals based on their informational states. Their informational states are said to represent whole "fact-like" situations, perhaps in some imagistic formats. And, critically, their informational states can be decoupled from the reality if they have not kept track of the relevant changes in the environment (for instance, dominants who did not witness the relocation of a reward subsequently act as if being in a

not only of forming/updating simple beliefs but, at some point in their development, of understanding beliefs as perspectives on the world that are apt to be correct or not depending on how the world is, independently of the fact that they or others take this or that perspective on it. This (and perhaps only this) may require language and so be the prerogative of us humans. Presumably, this is what happens in the case of children as they are becoming "fully human" beings capable of objective-reflective-normative thought.

That scale is merely suggestive. Further distinctions may be motivated and semi-grades inserted in between the three grades specified. For instance, whatever one's take on non-human animals and infants is, it should be agreed that three-year-olds are relatively skillful linguistic interlocutors capable of using whole sentences to make reports about the shared world, assessing others' reports as correct or incorrect and even distinguishing the direction of fit of reports (assertions) and commands.[298] Their grasp of their inferential involvement is limited, but they implicitly grasp something about source reliability, evidential relations or reasons.[299] Given that they produce and consume utterances that we normally consider meaningful and apt to be true or false, their thoughts seem kind of conceptually — indeed, inferentially and propositionally — articulated. At the same time, they struggle with explicit FB (related) tasks, not yet fully grasping the subjective/objective contrast required for fully objective thinking.[300] This may be considered an intermediate case of conceptual thought that is not yet fully objective-reflective. That said, there may be no fact of the matter to determine – so no point to quarrel over - whether such thoughts are "really"

---

state according to which it is still in the place where they last saw it). In this sense, then, apes qualify as believers.

[298] Cf. Pea (1982), Koenig and Echols (2003), Rakoczy and Tomasello (2009).

[299] Cf. Koenig et al. (2004); Koenig and Harris (2005a), Koenig. (2012), Harris ( 2012), Mercier et al. (2013), Castellain et al. (2018), Domberg et al. (2019), Butler et al. (2018), Fedra and Schmidt (2018), Koymen and Tomasello (2018), Koymen et al. (2020).

[300] Though when tasks are redesigned so as to mitigate "the pull of reality" (e.g., a toy is not relocated to another container but removed from the scene so that the child does not have any beliefs regarding its location in one or another container), three-year-olds already pass them. Also, the situation improves when children should enact what the agent would do. See Rubio-Fernandéz and Geurts (2013), (2016).

propositional. "Propositional thought" is a philosophers' term of art. Prototypes that form the core of the notion are thoughts, expressible in whole sentences, of competent speakers who know what their correctness (truth) requires and implies. But philosophers have failed to provide any agreed upon criteria to decide borderline cases.[301]

### *6.2. Second Comparison: Discourse and Objective Thought*

A similar diagnosis regarding the nature of thought in general applies, *mutatis mutandis*, to Brandom. Like Davidson, Brandom is preoccupied with discursive forms of propositional thought. And he, too, thinks that only interpreters of the speech of others are true believers.[302] That said, he recognizes "practical" or "simple" intentionality: directedness and differential responsiveness to and operation on (in *test-operate-test-exit* loops) external objects or features relevant to a system's needs or goals. This may involve sub-personal "representations" of sorts (e.g., maplike). But those lack normative conditions of correctness and so do not conceptualize (and in this sense represent) anything as anything, correctly or incorrectly. Now, it can be agreed that practical and conceptual (propositional) intentionality are different things. But

[301] Propositional thoughts are usually supposed to represent something as something and to display intensionality reflecting their aspectuality (or mode of presentation): attributions of propositional thoughts are sensitive to terms or concepts used to pick out those "somethings" and not even any co-extensive terms or concepts will do. They are also supposed to involve concepts as ingredients, which may be subject to something like the "generality constraint": if A represents *x* as being *F*, A should also be capable of a) representing, for any *y* that A is also capable to have thoughts about, *y* as being F, and b) for any *G* that A is also capable of applying, *x* as being *G* (Evans 1982). This is often thought to be linked to systematicity, productivity and inferential links between propositional thoughts. Compared to mature speakers, young kids' range of singular and predicative concepts, so of thinkable thoughts, is limited. The same applies to inferential relations between them that they are capable of appreciating (if only in practice). But there are differences here even between mature speakers. So even if three-year-olds do not yet appreciate many inferential links between claimables that we appreciate, they appreciate at least some. Is that enough to include them in the club of propositional thinkers? If not, how much is enough?

[302] Though Davidson and Brandom deny that actual communication presupposes "shared language" in the sense of conventions assigning the same (simple or compositional) meanings to the same (simple or complex) expression-types.

Brandom goes as far as suggesting only practical intentionality is needed for prediscursive critters to elaborate or develop normative practices and eventually discursive practices that embody full-blown discursive intentionality. This approach is problematic in at least two related respects. And I would again argue that Tomasello offers us something more palatable.

One problem is that Brandom's category of practical intentionality is, to use his own jargon, "too beastly to beasts." It does not distinguish reliable differential dispositions (of, say, thermometers) from the intentionality of flexible sentient creatures (organisms). To account for the prediscursive intentional abilities of higher animals (surely of infants) we are compelled to go well beyond object directedness or responsiveness. For example, dogs or apes can perceptually discriminate between *food being in location* $l_1$ (at one time) and the same *food being in location* $l_2$ (at another time) in a way that does not simply reduce to their discriminating (and differentially responding to) food, $l_1$ and $l_2$ respectively. At both times, food, $l_1$, $l_2$ may be perceived. Yet, when facing the first situation they would act differently (e.g., a dog not going for a piece of ham when it is placed on the table) than when facing the second situation (the dog going for the piece of ham when it is moved to the ground).[303] Call it representation or not, it seems that such critters perceive *something as something,* although the concepts that we bring to bear to describe those "somethings" – e.g., "eatable" or "placed somewhere" - carry with them also connotations and implications that most likely don't correspond to any features that they track and respond to. In so far as such critters can expect (perhaps imagine) such configurations, whilst those configurations may not be instantiated, it makes *prima facie* sense to attribute mistakes and surprises of sorts to them, thus simple beliefs as well as updating thereof. But such critters do not (need to) reflect on any of this.[304] Nor do they participate in social-normative practices. In view of this, there is definitely something to Tomasello's claim about animals' skills to think not just of objects but of fact-like situations.

[303] I owe this example to Glock (2013). I find his discussion of animal thought generally convincing.

[304] Though we saw in Chapter 5 that there is some (though controversial) evidence indicating metacognitive abilities of animals.

Another problem is that Brandom's account of the elaboration of discursive practices presupposes creatures already capable of participating in basic social-normative practices. Discursive practice is a species of the genus of social-normative practice with a special kind of structure and complexity. Regarding its behavioral infrastructure, Brandom is content to posit reliable differential dispositions to adopt normative attitudes (disapprovals, sanctions) and coordinate behavior (and normative attitudes). There are conceptual as well as empirical problems with this strategy. In order to distinguish rule-governed behavior from behavior that is merely in accordance with a rule, it seems that the former must be minimally intentional in the first place for a rule to serve both a reason for it and a standard of its assessment as good or bad: being goal-driven and subject to some volition and control. This casts doubt on Brandom's uncompromising strategy of prioritizing – in the *order of understanding* – purely normative description or reconstruction of social-normative practices. In view of the considerations pressed in the previous paragraph, merely incorporating practical intentionality (in Brandom's specific sense) into the picture may not be enough.

A related point, I think, can be pressed from an empirical perspective. Though Brandom is not concerned with how "the trick is done," his hint is that this kind of behavioral infrastructure (based on practical intentionality) suffices for the elaboration of discursive practices (and intentionality). Plus, he takes it as a condition of adequacy on his own account of what the trick consists in that it be consistent with our best facts/theories about how people actually develop (perform) the trick. However, Tomasello (along with other researchers mapping this terrain) documents that richer intentional forms of individual and intersubjective behavior (such as joint attention, imitation, dyadic and triadic forms coordination of affects, attitudes and goals) precede and ground abilities to take part in norm-governed activities and adopt normative attitudes.

On the other hand, regarding the nature of objective (reflective, normative) thought, Brandom's conceptual and Tomasello's empirical perspective resonate and may complement each other.

The common ground is the idea that objective thought requires some kind of understanding that what one thinks is correct under some conditions and incorrect under other conditions, where those conditions concern something independent and

external to adopting such attitudes. And that understanding requires the specific setting of intersubjective activities that afford opportunities to compare, contrast and coordinate perspectives from within which the world is differently represented or conceptualized. Both thinkers further agree that discoursing activities of sorts provide that setting. Finally, both suggest that doxastic locutions sort of serve to make this fully explicit.

For Tomasello, situations with the right kind of discrepancy of perspectives are simple exchanges in which interlocutors endorse and deny claims, respectively, thereby exchanging different, indeed conflicting positions toward or attitudes about them (and via them toward the world). Through such exchanges, Tomasello proposes, one (the child) may come to grasp the subjective/objective contrast embodied in the notion of (false) belief, because one is pressed to come to terms with the fact that what claim one holds true (believes), the other holds false (disbelieves).

In some respects, this proposal is more straightforward and promising than Brandom's rather abstract account of objectivity as a structural feature of social-perspectival discourse. In particular, though Brandom talks about scorekeepers` comparing and contrasting perspectives, his account does not specifically stress exchanges of conflicting perspectives through dialogue. For all he officially says, his "I"-s and "Thou"-s can keep the two sets of books on one another by interpreting one another's verbal responses even though those responses are not specifically engaged in mutual dialogue, including exchanges of discrepant perspectives (commitments). This does not do justice to second-personal connotations of the "I-Thou" kind of social relation (as opposed to "I-We" or "I-She" relations); nor, for that matter, does it capture Brandom`s *leitmotif* that scorekeepers play together "the game of giving an asking for reasons" - including challenging one another and responding to challenges. Which, of course, is an attractive feature of his normative account of the assertoric discourse as intimately bound up with reasoned discourse.[305]

[305] I take it that this feature is not optional, if assertion is to count as undertaking (indeed, acknowledging) of a commitment that assertor is supposed to properly vindicate should it be properly challenged (or else to retract it). I assume that this opportunity to discharge the vindicatory responsibility arises only when the challenge is somehow addressed to the attention of assertor by some audience/interlocutor (e.g. by uttering a sentence treated as incompatible). Which is a precondition for

In this context, we can read Tomasello as suggesting that second-personal exchanges of opposed claims afford the right kind of opportunities to come to terms with the clash of perspectives on the shared world. And we can surely translate this idea into Brandom's own framework. Through taking part in such second-personal exchanges, one (the child) may begin to actively appreciate the multiplicity of different and specifically conflicting/challenging perspectives on the world: commitments acknowledged by them and interlocutors cannot both be correctly accepted.

This strikes me as a good try. That said, I am concerned that the focus on simple exchanges of opposed attitudes invites the following worry. Granted, X assents to whereas Y dissents from something respectively. But why should this fact alone prompt X (the child) to realize that there is something independent – i.e. objective reality – to which both attitudes (sayings) are equally beholden and answerable for their correctness? It seems that to get a purchase on *objective* correctness, interlocutors should grasp the possibility that anyone of them can be mistaken. But it is not clear how simple exchanges induce A to appreciate this symmetry. Why shouldn't X sort of dogmatically treat Y as mistaken without acknowledging that, in principle, the world might be otherwise than A himself (or any interlocutor) takes it to be?[306]

Perhaps anticipating such concerns, Tomasello helps himself to the notion of "objective perspective." To be capable of "taking an objective perspective" is to be capable of recognizing impersonal standards of correctness. The onset of the ability to take an objective perspective is at around three years, in the child's sensitivity and deference to the "we" perspective of his group. In exchanges of opposed attitudes to claims, the child is afforded unique opportunities to differentiate, confront and coordinate three perspectives: the two subjective perspectives with each other and both

---

exchanges of reasons between assertors and interlocutors. In so far as assertions, so conceived, count as *implicit knowledge claims* in the way Brandom proposes, I take it that an implicit grasp of knowledge, hence of objectivity, also presupposes that, at some point, responses come to be confronted and assessed as such within dialogical exchanges. This is linked to my discussion of Price`s (2011) account of the link between the norm of objective correctness (truth), disagreement and reasoned discourse.

[306] If the child takes the interlocutor (typically adult) as an authority who is default correct, this also falls short of recognizing the attitude-independent nature of objective correctness.

with the objective perspective supposed to reflect independent reality. This, then, catalyzes the development of his grasp of the subjective/objective contrast.[307]

Yet the link forged by Tomasello between objective and collective perspective is not without problems. Even if we agree that three-year-olds' troubles with explicit FB-tasks reflect fixation on "reality," why should this have anything to do with taking a "we" perspective? Why not explain the data by hypothesizing that younger children do not yet grasp that others may take the world to be different than "they" take it to be?[308] In addition, there is a sense in which both "I"s (individuals) and "We"s

[307] Interestingly, Tomasello (2019) remarks that standard FB-tasks may not afford such opportunities themselves, in so far as the child`s takes his own perspective to capture how things really are, notes that the agent`s perspective diverges, and on this basis predicts what the agent would do. The idea is, perhaps, that only direct confrontations with discrepant perspectives of interlocutors compels the child not to take this coincidence for granted.

[308] One may also argue that this has something to do with three-year-olds being *objectivists* of sorts but without yet having any idea of the contrast between subjective and objective perspectives. In this vein, Perner and Roessler (2012), Roessler and Perner (2013), Perner et al. (2018) propose that young children are teleologists who may not yet think of and reason on others in terms of subjective, representational states of mind like beliefs and desires. Instead, they may think and reason in terms of what one has "objective" reasons to do (so what one ought to do) in a given situation, where those reasons (concerning valued end-states to be realized and means or circumstances conducive to realizing them) are fact-like features of the situation and not subjective beliefs or desires regarding it. Often, teleology is a good strategy. But its signature limits are exposed in explicit FB scenarios that require one to explicitly take into account both how things are (by one's own lights) and how they are taken (appear) to be (by actor's lights). This requires explicitly understanding (and not just implicitly taking and shifting between) subjective perspectives on objective reality. This proposal explains the "reality bias" in three-year-olds and also their consistent failure in explicit FB-tasks without positing any grip on the subjective/objective contrast. Thus three-year-olds may not yet differentiate the perspectives of others from their own and both from reality (so they are not self-conscious objectivists). Tomasello (2018), (2019) refers to Perner and Roessler (2012) as a congenial view. But their proposal does not postulate any grip on the collective ("we") perspective, though they stress that situations and fact-like reasons are mutually manifest and treated as public and shared. Plus, unlike Perner and Roessler, Tomasello implies that three-year-olds do have some grip (if nascent and implicit) on the difference between subjective and objective perspectives. Thus, they may take the objective perspective when rejecting others' claims at odds with observed situations as incorrect; but they struggle to do the same with respect to their own claims, perhaps because their own perspective coincides for them with the objective. As Tomasello (2018) puts it himself: they do not understand that they can be mistaken. At this point, however, Perner and Roessler

(communities) fall on the subjective side of the subjective/objective divide. The views of communities are something for which the question of objective correctness seems equally pertinent. Collective views (even unanimous consensus) on matters factual may be wrong. Even if one voices the view of a community, that does not mean that he is right by default and his opponent is wrong. So the "objective perspective" had better not be a community's perspective. To think of the latter as default-correct is to adopt a "parochial" perspective, rather than an "objective" perspective. One may think, with good reason, that his community's views on some matters are objectively correct. But if "objectively" makes some genuine difference in one's thinking here, then one thinks that the view has the facts right, where those facts are independent of the view (attitude).

This objection of a piece with Brandom's criticism of "I-We" sociality.[309] Again, perhaps anticipating such concerns, Tomasello suggests that the child may initially restrict the "we" to his own community; but progressively understands it as ever more inclusive. Thus the child would be able to take an ever more universal and inclusive perspective. This idea has some *prima facie* appeal.[310] Yet, as Brandom is at pains to point out, there is still a distinction to be drawn between what is correct according to *us* and what is correct *anyway*. And the difference does not seem go away unless we envisage "us," *per impossible*, to adopt the god's eye view or to pass judgments under ideal conditions. But as Davidson and others argued, it is hard to get a grip on ideal conditions without the idea of objective correctness re-entering through the backdoor.[311]

---

would probably say that without appreciating that difference, the subjective-objective contrast is not yet in view.

[309] Brandom (1994, chapter 8).

[310] Nagel (1989) talks about the objective perspective as *the view from nowhere in particular*, being able to think of the world, including oneself, from outside, adopting an ever more inclusive view. Sellars (1968) talks of a mode of reasoning (theoretical and practical) *sub specie* "we" (as distinct from *sub specie* "I"). The idea seems to be that the development of ever greater objectivity and rationality is reflected in an ever more inclusive conception of the relevant community, up to the community of rational beings.

[311] Davidson (1990). See also Price (2011).

Still, I think that Tomasello may yet be right that the development of objective thought depends on second-personal exchanges involving disagreement. But these may need to be more complex.

At one point, I submit, Tomasello points us almost in the right direction, commenting on understanding the subjective-objective contrast (in the context of false-belief scenarios):

> […] a fully adult-like understanding would include the proviso that the child herself might potentially be wrong; […] The objective situation is independent not only of what the agent believes but also of what the child as observer believes. A fully adult-like understanding would thus be that the agent believes that the object is in the box; the child observer believes that it is in the cabinet because she saw it moved there; thus the child's best guess is that the objective situation matches her own belief (because she has good evidence, and the agent has misleading evidence). To fully understand the notion of belief, one must understand that whether the evidence is weak or strong, the believer—the agent, the person observing, or both—can always be wrong from an objective perspective. That is what defines the notion of belief. (Tomasello, 2018, p. 76)

I want to draw two lessons from this line of reasoning.

The first lesson is that the child's grip on the objectivity of claims or thoughts about the world, and the child's grip on them as moves in a space of reasons, may be two sides of the same coin. The child must distinguish between his own and the other's response in light of what the situation *warrants*: what there is evidence or reason to say or think. Moreover, the child must have a sense that the other views the situation from a different epistemic perspective, taking it to warrant her own, conflicting response. So the child must differentiate – if only implicitly – between what, by his lights, the situation warrants, and what, by the other's lights, it warrants.[312] The child must also treat the perspectives as not on a par. He is prepared to treat the other's response as incorrect, because he takes it that the situation warrants his response in such a way that it excludes the other's response as warranted. Indeed, the child must

[312] So, once he reaches this point, the child cannot be an "objectivist" in the sense of Perner and Roessler (2012).

appreciate something like "in-principle symmetry" (or "merely local privilege") for such empirical responses to the world: though he regards the other's response mistaken, he allows for the possibility of himself being mistaken.

The second lesson is that disengaged, observational experience may not be enough to develop this idea, because it may not challenge the child to distinguish his own perspective as a perspective on the shared world out there. For instance, three-year-olds, upon hearing others' reports about observable situations at odds with their own experience, treat speakers as wrong (saying "No!" or even correcting speakers). But they may do so without yet grasping that they are themselves taking a certain perspective on the world that may fail to match it. After all, children around this age have troubles to appreciate the possibility of being mistaken (recall "Smarties" tasks).[313]

With this in place, let me finally formulate an alternative proposal. It concurs with Tomasello that a communicative engagement with others is needed to grasp the subjective-objective contrast. Specifically, a grip on the subjective/objective contrast may emerge via confronting, assessing and coordinating different perspectives on the world, by recognizing a limited and partial character of each perspective and the ever present possibility to have a more inclusive perspective ("know better") by engaging with and learning from others. One way of recognizing this is by being opposed or corrected by others and by realizing that there is a need or pressure to say something in favor of one's view, that one may or may not have such things to say whilst others do have or have better things to say. In this way, one may come to recognize that perspectives – including one's own - are equally accountable or answerable for their correctness to something external and independent.[314] Elaborating on this idea, I

[313] This diagnosis has a bite no matter whether we think of the situation in terms of children taking an objective perspective at the expense of taking account of others' subjective perspectives (as Tomasello suggests) or in terms of children focusing on shared fact-like situations as objective reasons to say or do something (as Perner and Roessler suggest).

[314] The child may think that the interlocutor (in particular, adult) is better positioned to "know", since the child has had many opportunities to see that the adult made knowledgeable claims about things that the child was not in a position to make himself. But, I take it, so treating the adult as knowledgeable (reliable, trustworthy) is one way of being sensitive to reasons

propose that discursive exchanges catalyzing this recognition involve not only exchanges of conflicting attitudes but also of reasons for or against attitudes. I have in mind exchanges of claims and reasons such as the following one discussed in Chapter 3:

> X: (*P*): "Fred is in the kitchen."
>
> Y: "Really?"
>
> X: (*Q*): "Because I saw him go there."
>
> Y: (*R*): "But I saw him go to the garden."
>
> X: (*S*): "No, that wasn't Fred but John."

Through such or simpler exchanges, repeated over time with different interlocutors, one (the child) may come to appreciate that there is such a thing as viewing the shared world in a right or wrong way; where this applies equally to others' view as well as to one's own view. To appropriate Brandom's apt formulation, through such exchanges one may come to see that each perspective is "only locally privileged" (Brandom 1994, p. 600); therefore:

> Sorting out who should be counted as correct, whose claims and applications of concepts should be treated as authoritative, is a messy retail business of assessing the comparative authority of competing evidential and inferential claims. Such authority as precipitates out of this process derives from what various interlocutors say rather than from who says it; no perspective is authoritative as such. There is only the actual practice of sorting out who has the better reason in particular cases. (Ibid., p. 600)

It should be said that Tomasello recognizes the critical role of reasoned exchanges in the development of *reflective reasoning*. But because he thinks that to reflectively reason is to assess evidence or reasons speaking for the truth or falsity of a claim or belief, one can only engage in reflective reasoning if one already possesses the notion of belief or objectivity. He suggests that reflective reasoning is structured

by joint attention to reasons (for claims or beliefs) and exchanging attitudes about them.[315]

Properly qualified, I think, there is a grain of truth in this. The ideas developed in Chapter 1 suggest that the link between disagreement and reasoned discourse is mediated by the recognition of incompatibilities between sayings reflecting their semantic proprieties and inferential links. If I am right, disagreements motivating exchanges of reasons arise against this backdrop, which already involves an implicit sensitivity of parties to the dimension of (in)correctness. But a basic grip on sayings as correct or incorrect classifications of the world co-develops with a basic grip on sayings as standing in such relations: a basic grip on them, that is, as moves in a space of reasons. Reasoned exchanges with others both presuppose some such competence and serve to extend it and make the grip increasingly self-conscious. Applied to the child, then, they may give him the necessary experience that perspectives (including its own) are equally partial/local, challengeable and accountable or answerable for their (in)correctness to something external and independent. This is a kind of intersubjective experience that invites recognizing that symmetry by engaging in perspective taking and role-reversal. I am registering and assessing your view (as expressed in your claim) and *vice versa*. We do so by taking into account what there is to be said for or against them, against the backdrop of the shared space of reasons. For all that, however, the grasp of belief and objective correctness (truth) can be implicit to begin with.

Although this alternative proposal draws on some insights borrowed from Brandom, it need not take on board all the subtleties of his account of objectivity as a structural feature of scorekeeping activities. As for commonalities, my proposal, too, is hospitable to the idea that the subjective/objective contrast is co-constituted with the practices of sharing the world through linguistic exchange structured by proprieties of and incompatibilities between sayings. Yet I attempted to show in Chapter 1 and 2 that such practices (their mastery) may at first require coordination of responses into socially shared assertional proprieties and incompatibilities. Nothing as elaborate as I-

[315] Cf. O'Madagain and Tomasello (2019) and Tomasello (2019).

Thou scorekeeping is needed, nor plausible, at this basic stage.[316] Looking at the emergence of objective discourse and thought from the ontogenetic perspective, the child may gradually secure a grip on the contrast through being introduced into such claim-making practices both as a witness and active participant. My proposal is that the child's skills to make claims, assess claims and (especially) participate in reasoned exchange develop; and so do, hand in hand with them, their skills of understanding others (themselves) as perspectivizers of the objective world.

This proposal allows that one may be partially competent in such discourse – so possess a basic sense of objectivity - without yet being capable of forming higher-order thoughts to the effect that others believe that *p*. Concepts and capacities required for such explicit thoughts about thoughts (beliefs) may well depend on linguistic experience and may well be modelled on (attributions, assessments of) false sayings. Encouragingly, it has recently been argued by several authors that it makes some developmental sense to conjecture that one first begins to understand something about assertional commitments, including false (incorrect) assertions and indirect speech; and later, based on this, beliefs, including false beliefs.[317] This is consistent with the evidence that two- to four-year-olds display growing abilities to grasp something about when sayings are in order and when not, as well as about what kind of considerations support them and what they imply.

## 6. Conclusion

In this concluding chapter I continued my explorations embarked on in Chapter 5, where I argued that language rationalists owe us some account of cognitive skills underlying social activities or practices subject to normative assessment. I focused on Tomasello's account of the development of intermediate social-cognitive skills as an attempt that may partially fill in this gap, provided we interpret it (more) cautiously. In this chapter, I started by noting that language rationalists are onto something when they focus on objective-propositional thought. And Tomasello's framework stresses

[316] Taken at face value, an account of verbal communication in terms of social-perspectival scorekeeping may require not much less from young (or ancestral) speakers than orthodox Gricean accounts (criticized on this score in Chapter 5).

[317] Gauker (2002), (2020), Jary (2010), (2018), Geurts (*unpublished manuscript*).

similar features of "objective-reflective-normative" thought and offers empirical insights into its nature and development. Exploiting this point of contact, I compared Davidson's and Brandom's views on objective thought with Tomasello's account of its development as rooted in intersubjective abilities to grasp the difference between subjective and objective perspective. By critically comparing and navigating across these theoretical perspectives, I finally suggested an alternative picture of the nature and emergence of objective thought that accommodates vital aspects of each.

# *Postscript*

In this book I attempted to shed some new light on human practices of reason, the core of which consists in making and assessing claims as moves in a space of reasons. Its *leitmotif* was that we humans are sapient creatures in part due to being capable of participating in such social-communicative practices. My intellectual debts to the conceptual legacy of inferentialists and other language rationalists should be obvious. But it was not my aim to reconceptualize some philosophical doctrine as a whole from this perspective. Rather, I set out to proceed in an exploratory and problem-based way, zooming in on the constitution of the space of reasons, assertoric practice, reasoned discourse, the social nature of reasoning, intersubjective roots of social practices and the nature of objective thought. To this end, I brought to bear philosophical (conceptual and pragmatic-genealogical) methods to tackle these topics as well as critical comparison with extant scientific approaches that recently explored some of them in a more naturalistic spirit. On the one hand, I pointed out problems and gaps in both the philosophical outlook and the naturalistic outlook. On the other hand, I highlighted their respective strengths and suggested how we could gain a better understanding of human sapience by fusing them. No doubt, much more could have been said. And much of what I said could have been said better. But I hope to have shown that this kind of intellectual exercise – rare among language rationalists – is worth trying out.

# *Acknowledgements*

This book has been long in the making and I was happy to receive valuable feedback from my colleagues. My greatest intellectual debts and thanks go to my former teacher and now colleague and friend, Jarda Peregrin. Jarda commented on the draft of the whole book and pressed me to improve several of its core arguments. I am also very grateful to Ulf Hlobil and Preston Stovall for their incisive comments on the material included in the second part of the book focused on reasoning. Andrew Christensen deserves many thanks for his careful proofreading of the whole book. I am grateful to Marek Tomeček for minor proofreading and, more importantly, for stimulating and friendly debates over beer in the last two decades. I would like to thank the Faculty of Philosophy of the University of Hradec Králové for granting me a sabbatical in the academic year 2016/17. During that period, I was happy to be awarded an Aktion Habilitation Fellowship, which sponsored my research stay at the University of Vienna. Last but not least, my work on the book was an integral part of the long-term research project, *Man as a Normative Creature*, supported within the grant scheme *Excellent Research at the University of Hradec Králové*.

# *Bibliography*

Alston, W.P. (2000). *Illocutionary acts and sentence meaning*. Ithaca, New York: Cornell University Press.

Andrews, K. (2009). Understanding norms without a theory of mind. *Inquiry*, *52*(5), 433-448.

Apperly, I. A., and Butterfill, S. A. (2009). Do humans have two systems to track beliefs and belief-like states?. *Psychological Review*, *116*(4), 953-970.

Apperly, I. (2010). *Mindreaders: the cognitive basis of "theory of mind"*. New York: Psychology Press.

Astington, J. W., and Jenkins, J. M. (1999). A longitudinal study of the relationship between language and theory-of-mind development. *Developmental Psychology*, *35*, 1311–1320.

Austin J. L. (1962). *How to do things with words*. Cambridge MA: Harvard University Press.

Bar-On, D. (2013). Origins of meaning: Must we 'go Gricean'?. *Mind & Language*, *28*(3), 342-375.

—— (2019). Crude meaning, brute thought. *Journal for the History of Analytical Philosophy*, *7*(2), 29-46

Baillargeon, R., Scott, R.M., and He, Z. (2010). False-belief understanding in infants. *Trends in Cognitive Sciences*, *14*(3), 110-118.

Bakeman, R., and Adamson, L. B. (1984). Coordinating attention to people and objects in mother-infant and peer-infant interaction. *Child Development*, *55*(4), 1278-1289.

Baron-Cohen, S., Leslie, A. M., & Frith, U. (1985). Does the autistic child have a "theory of mind". *Cognition*, *21*(1), 37-46.

Barr, D. J., and Keysar, B. (2005). Making sense of how we make sense: The paradox of egocentrism in language use. In Colston, H. L., and Katz, A.N. (Eds.). *Figurative language comprehension: Social and cultural influences* (pp. 21-41). New York: Routledge.

Barrett, C. S. (2015). *The shape of thought*. New York: Oxford University Press.

Beisecker, D. (2013). From the grunts and groans of the cave…. Presidential Address. *Southwest Philosophy Review*, *29*(1), 1-11.

Bennett, J. (1964). *Rationality*. London: Routledge and Kegan Paul.

—— (1976). *Linguistic behaviour*. Cambridge MA: Cambridge University Press.

Belnap, N. (1990). Declaratives are not enough. *Philosophical Studies*, *59*(1), 1–30.

Bermúdez, J. L. (2003). *Thinking without words*. New York: Oxford University Press.

—— (2007). Thinking without words: An overview for animal ethics. *The Journal of Ethics*, *11*(3), 319-335.

—— (2009). Mindreading in the animal kingdom. In Lurz, R. W. (Ed.). *The philosophy of animal minds* (pp. 145-164). Cambridge: Cambridge University Press.

Bickerton, D., and Szathmáry, E. (2011). Confrontational scavenging as a possible source for language and cooperation. *BMC Evolutionary Biology*, *11*(1), 261.

Birch, J. (2017). *The philosophy of social evolution*. Oxford: Oxford University Press.

Bloom, L. (2000). The intentionality of word learning: How to learn a word, any word. In Golinkoff, R., Hirsh-Pasek, K., Bloom, L., Smith, L.B., Woodward, A. L., Akhtar, N., Tomasello, M., Hollich, G. (Eds.). *Becoming a word learner: A debate on lexical acquisition* (pp. 19-50). New York: Oxford University Press.

Boesch, C. (2012). *Wild cultures: a comparison between chimpanzee and human cultures*. Cambridge MA: Cambridge University Press.

Bogdan, R.J. (2009). *Predicative minds: The social ontogeny of propositional thinking*. Cambridge MA: MIT Press.

Boghossian, P. (2014). What is inference? *Philosophical Studies*, *169*(1), 1–18.

Bohn, M., and Köymen, B. (2018). Common ground and development. *Child Development Perspectives*, *12*(2), 104-108.

Boyle, M. (2017). A different kind of mind?. In Andrews, K., and Beck, J. (Eds.) (2017). *The Routledge handbook of philosophy of animal mind* (pp. 109-118). New York: Routledge.

Brandom, R. (1983). Asserting. *Noûs*, *17*(4), 637-650.

—— (1994). *Making it explicit: Reasoning, representing, and discursive commitment*. Cambridge MA: Harvard University Press.

—— (1997a). Replies. *Philosophy and Phenomenological Research*, *57*(1), 189–204.

—— (1997b). Reply to commentators. *Philosophical Issues*, *8* (*Truth*), 199–214.

—— (2000). *Articulating reasons: An introduction to inferentialism*. Cambridge MA: Harvard University Press.

—— (2008a). *Between saying and doing: Towards an analytic pragmatism*. Oxford: Oxford University Press.

—— (2008b). Responses. *Philosophical Topics*, *36*(2), 135–155.

—— (2008c). Responses. In Stekeler-Weithofer, P. (Ed.). *The pragmatics of Making it Explicit* (pp. 209–229). Amsterdam: John Benjamins.

—— (2010a). Conceptual content and discursive practice. *Grazer Philosophische Studien*, *81*(1), 13–35.

—— (2010b). Reply to Mark Lance and Rebecca Kukla's 'Perception, language, and the first person'. In Wanderer, J., and Weiss, B. (Eds.). *Reading Brandom: On Making it Explicit* (pp. 316–319). New York: Routledge.

Bratman, M. E. (1992). Shared cooperative activity. *Philosophical Review*, *101*(2), 327–341.

—— (1993). Shared intention. *Ethics*, *104*(1), 97–113.

—— (2014). *Shared agency*. Oxford: Oxford University Press.

Broome, J. (2013). *Rationality through reasoning*. Chichester: Wiley-Blackwell.

— (2014). Comments on Boghossian. *Philosophical Studies*, *169*(1), 19–25.

Brown, J., and Cappelen, H. (Eds.) (2011). *Assertion: New philosophical essays*. Oxford: Oxford University Press.

Bruner, J. S. (1990). *Acts of meaning*. Cambridge MA: Harvard University Press.

Burge, T. (2010). *Origins of objectivity*. Oxford: Oxford University Press.

Butterfill, S. (2012). Joint action and development. *Philosophical Quarterly, 62*(246), 23–47.

—— (2017). Coordinating joint action. In Jankovic, M., and Ludwig, K. (Eds.). *The Routledge handbook of collective intentionality* (pp. 68-82). New York: Routledge.

—— (2020). *The developing mind: A philosophical introduction*. New York: Routledge.

Butterfill, S. A, and Apperly, I. A. (2013). How to construct a minimal theory of mind. *Mind & Language*, *28*(5), 606–637.

Call, J., and Carpenter, M. (2001). Do apes and children know what they have seen?. *Animal Cognition*, *3*(4), 207-220.

Call, J. (2006). Descartes' two errors: Reason and reflection in the great apes. In Hurley, S., and Nudds, M. (eds.). *Rational animals?* (pp. 219–234). Oxford: Oxford University Press.

—— (2010). Do apes know that they could be wrong?.*Animal Cognition*, *13*(5), 689-700.

Call, J., and Tomasello, M. (2008). Does the chimpanzee have a theory of mind? 30 years later. *Trends in Cognitive Sciences*, *12*(5), 187–192.

Carey. S. (2009). *The origin of concepts*. New York: Oxford University Press.

Carroll, L. (1895). What the tortoise said to Achilles. *Mind, 4*(14), 278–280.

Carpenter, M. and Liebal, K. (2011). Joint attention, communication, and knowing together in infancy. In Seemann, A. (Ed.). *Joint attention: New developments in psychology, philosophy of mind, and social neuroscience* (pp. 159-181). Cambridge MA: MIT Press.

Carpenter, M., and Call, J. (2013). How joint is the joint attention of apes and human infants. In Metcalfe, J., & Terrace, H. S. (Eds.). *Agency and joint attention* (pp. 49-61). Oxford: Oxford University Press.

Carruthers, P. (2006). *The Architecture of the mind: Massive modularity and the flexibility of thought*. Oxford: Oxford University Press.

—— (2008). Metacognition in animals: a skeptical look. *Mind & Language*, *23*(1): 58-89.

—— (2013). The distinctively-human mind: the many pillars of cumulative culture. In Hatfield, G. and Pittman, H. (Eds.). *The evolution of mind, brain, and culture* (pp. 325-345). Philadelphia: University of Pennsylvania Press.

Castelain, T., Bernard, S., and Mercier, H. (2018). Evidence that 2-year-old children are sensitive to argument strength. *Infancy*, *23*(1), 124-135.

Chater, N., and Oaksford, M. (2018)). The enigma is not entirely dispelled: A review of Mercier and Sperber's *The enigma of reason*. *Mind and Language*, *33*(5), 525-532.

Christiansen, M. H., and Chater, N. (2016). *Creating language: Integrating evolution, acquisition, and processing*. Cambridge MA: MIT Press.

Chudnoff, E. (2014). The rational roles of intuitions. In Booth, A. R., and Rowbottom, D. P. (Eds.). *Intuitions* (pp. 9–35). Oxford: Oxford University Press.

Cosmides, L., and Tooby, J. (1994). Origins of domain specificity: The evolution of functional organization. In Hirschfeld, L., and Gelman, S. (Eds.). *Mapping the mind* (pp. 85-116). Cambridge MA: Cambridge University Press.

Cosmides, L., and Tooby, J. (1997). The modular nature of human intelligence. In Scheibel, A., and Schopf, J. W. (Eds.). *The origin and evolution of intelligence* (pp. 71-101). Sudbury MA: Jones and Bartlett Publishers.

Craig, E. (1990). *Knowledge and the state of nature*. Oxford: Clarendon Press.

Csibra, G., and Gergely, G. (1998). The teleological origins of mentalistic action explanations: A developmental hypothesis. *Developmental Science*, *1*(2), 255-259.

—— (2009). Natural pedagogy. *Trends in Cognitive Sciences*, *13*(4), 148-153.

Damasio, A. R. (1994). *Descartes' error: Emotion, reason and the human brain*. New York: Putnam.

Davidson, D. (1975). Thought and talk. In Guttenplan, S. (Ed.). *Mind and language* (pp. 7-23). Oxford: Oxford University Press.

—— (1984). *Inquiries into truth and interpretation: Philosophical essays*. Oxford: Clarendon Press.

—— (2001). *Subjective, intersubjective, objective*. Oxford: Oxford University Press.

Deacon, T. W. (1998). *The symbolic species: The co-evolution of language and the brain*. New York: WW Norton & Company.

Dennett, D. C. (1983). Intentional systems in cognitive ethology: The "Panglossian paradigm" defended. *Behavioral and Brain Sciences*, *6*(3), 343-90.

—— (1987). *The intentional stance*. Cambridge MA: MIT Press.

—— (2017). *From bacteria to Bach and back: The evolution of minds*. New York: WW Norton & Company.

DeRose, K. (2002). Assertion, knowledge, and context. *The Philosophical Review*, *111*(2), 167-203.

Desalles, J.-L. (2007). *Why we talk: The evolutionary origins of language*. Oxford: Oxford

University Press.

De Villiers, J. G., and De Villiers, P. A. (2000). Linguistic determinism and the understanding of false beliefs. In Mitchell, P., and Riggs, K. J. (Eds.). *Children's reasoning and the mind* (pp. 191-228). New York: Psychology Press.

De Waal, F. (2016). *Are we smart enough to know how smart animals are?*. New York: WW Norton & Company.

Dogramaci, S. (2013). Intuitions for inferences. *Philosophical Studies*, *165(*2), 371–399.

Doherty, M. (2008). *Theory of mind: How children understand others' thoughts and feelings*. New York: Psychology press.

Domberg, A., Köymen, B., and Tomasello, M. (2018). Children's reasoning with peers in cooperative and competitive contexts. *British Journal of Developmental Psychology*, *36*(1), 64-77.

Douven, I. (2006). Assertion, knowledge, and rational credibility. *The Philosophical Review*, *115*(4), 449-485.

Dretske, F. (1981). *Knowledge and the Flow of Information*. Cambridge MA: MIT Press.

Dummett, M. (1981). *Frege: Philosophy of language*. Cambridge MA: Harvard University Press.

Dunbar, R. (1998a). *Grooming, gossip and the evolution of language*. Cambridge MA: Harvard University Press.

—— (1998b). The social brain hypothesis. *Evolutionary Anthropology: Issues, News, and Reviews: Issues, News, and Reviews*, *6*(5), 178-190.

Dutilh Novaes, C. (2018). The enduring enigma of reason. *Mind and Language*, *33*(5), 513-524.

Evans, G. (1982). *The varieties of reference*. Oxford: Clarendon Press.

Evans, J. St. B. T. (2010). *Thinking twice*. New York: Oxford University Press.

Evans, J. St. B. T., and Over, D. E. (1996). *Rationality and reasoning.* Hove, UK: Psychology Press.

Evans, J. St. B, and Frankish, K. (Eds.) (2009). *In two minds*. New York: Oxford University Press.

Feigenson, L., Dehaene, S., and Spelke, E. (2004). Core systems of number. *Trends in Cognitive Sciences*, *8*(7), 307-314.

Fernbach, P., and Sloman, S. (2017). *The knowledge illusion*. *Why we never think alone*. New York: Riverhead Books.

Fitch, W. T. (2004). Kin selection and "mother tongues": A neglected component in language evolution. In Müller, G. B., Pradeu, T., and Schäfer, K. (Eds.). *Evolution of communication systems: A comparative approach* (pp. 275-296). Cambridge MA: MIT Press.

—— (2010). *The evolution of language*. Cambridge MA: Cambridge University Press.

Fodor, J. A., and Pylyshyn, Z. W. (1988). Connectionism and cognitive architecture: A critical analysis. *Cognition*, *28*(1-2), 3-71.

Fodor, J. A. (1975). *The language of thought*. Cambridge MA: Harvard University Press.

— (1983). *The modularity of mind.* Cambridge MA: MIT Press.

— (1987). *Psychosemantics: The problem of meaning in the philosophy of mind*. Cambridge MA: MIT Press.

— (2000). *The mind doesn't work that way: The scope and limits of computational psychology*. Cambridge MA: MIT press.

Fricker, M. (2008). Scepticism and the genealogy of knowledge: Situating epistemology in time. *Philosophical Papers*, *37*(1), 7-50.

Frith, C. (2013). *Making up the mind: How the brain creates our mental world*. Hoboken, NJ: John Wiley & Sons.

Gauker, C. (2003). *Words without meaning*. Cambridge MA: MIT Press.

—— (2011). *Words and images: An essay on the origin of ideas*. Oxford: Oxford University Press.

—— (2020). Belief Attribution as Indirect Communication. In Koreň, L. et al. (Eds.) (2020).

Gilbert, M. (1990). Walking together: A paradigmatic social phenomenon. *Midwest Studies in Philosophy*, *15*, 1-14.

Glock, H. J. (2000). Animals, thoughts and concepts. *Synthese*, *123*(1), 35-64.

—— (2010). Can animals judge?, *Dialectica*, *64*(1), 11-33.

—— (2012). The anthropological difference: What can philosophers do to identify the differences between human and non-human animals?. *Royal Institute of Philosophy Supplements*, *70*, 105-131.

—— (2013). Animal minds: A non-representationalist approach. *American Philosophical Quarterly*, *50*(3), 213-232.

Gómez, J. C. (1994). Mutual awareness in primate communication: A Gricean approach. In Parker, S.T., Mitchell, R. W., and Boccia, M. L. (Eds.). *Self-awareness in animals and humans: Developmental perspectives* (pp. 61–80). Cambridge: Cambridge University Press.

—— (2005). Joint attention and the notion of subject: Insights from apes, normal children, and children with autism. In Eilan, N., Hoerl, C., McCormack, T., and Roessler, J. (Eds.), *Consciousness and self-consciousness. Joint attention: Communication and other minds: Issues in philosophy and psychology* (p. 65–84). Oxford: Clarendon Press/Oxford University Press.

—— (2007). Pointing behaviors in apes and human infants: a balanced interpretation. *Child Development*, *78*(3), 729-734.

—— (2009). *Apes, monkeys, children, and the growth of mind*. Cambridge MA: Harvard University Press.

Graham, P. J. (2019). The function of assertion and social norms. In Goldberg, S. (Ed.). *The Oxford handbook of assertion*. Oxford: Oxford University Press. DOI: 10.1093/oxfordhb/9780190675233.013.30.

Green, M. S. (2009). Speech acts, the handicap principle and the expression of psychological states. *Mind & Language*, *24*(2), pp.139-163.

Grice, H. P. (1989). *Studies in the way of words*. Cambridge MA: Harvard University Press.

Haidt, J. (2012). *The righteous Mind: Why good people are divided by religion and politics*. New York: Pantheon.

Hamann, K., Warneken, F, Greenberg, J. R, and Tomasello, M. (2011). Collaboration encourages equal sharing in children but not in chimpanzees. *Nature, 476*(7360), 328–331.

Hale, C. M., and Tager-Flusberg, H. (2003). The influence of language on theory of mind: A training study. *Developmental Science, 6*(3), 346-359.

Hare, B., Call, J., Agnetta, B, and Tomasello, M. (2000). Chimpanzees know what conspecifics do and do not see. *Animal Behaviour, 59*(4): 771–785.

Hare, B., Call, J., and Tomasello, M. (2001). Do chimpanzees know what conspecifics know? *Animal Behaviour, 61*(1): 139–151.

Hare, B., and Tomasello, M. (2004). Chimpanzees are more skillful in competitive than in cooperative cognitive tasks. *Animal Behaviour, 68*(3), 571–581.

Harris, P. (1996). Desires, beliefs, and language. In Carruthers, P., and Smith, P. K. (Eds.). *Theories of theories of mind* (pp. 200–220). Cambridge, MA: Cambridge University Press.

—— (1999). Acquiring the art of conversation: Children's developing conception of their conversational partner. In Bennett, M. (Ed.). *Developmental psychology*: *Achievements and prospects*. Philadelphia: Psychology Press.

——(2012). *Trusting what you're told: How children learn from others*. Cambridge MA: Harvard University Press.

Haugeland, J. (1998). *Having thought*. Cambridge MA: Harvard University Press.

Hawthorne, J. (2004). *Knowledge and lotteries*. Oxford: Oxford University Press.

Heyes, C., and Frith, C. (2014). The cultural evolution of mind reading. *Science*, *344*(6190), 1243091.

Heyes, C. (2017). Apes submentalise. *Trends in Cognitive Sciences*, *21*(1), 1-2.

—— (2018). *Cognitive gadgets*. Cambridge MA: Harvard University Press.

Henrich, J. (2016). *The secret of our success: How learning from others drove human evolution, domesticated our species, and made us smart*. Princeton: Princeton University Press.

Henriques, G. (2011). *A New Unified Theory of Psychology.* New York: Springer.

Herrmann, E., Call, J., Hernández-Lloreda, M.V., Hare, B., and Tomasello, M. (2007). Humans have evolved specialized skills of social cognition: The cultural intelligence hypothesis. *Science*, *317*(5843), 1360-1366

Herrmann, E., Hernández-Lloreda, M.V., Call, J., Hare, B. and Tomasello, M. (2010). The structure of individual differences in the cognitive abilities of children and chimpanzees. *Psychological Science*, *21*(1), 102-110.

Hlobil, U. (2014). Against Boghossian, Wright and Broome on inference. *Philosophical Studies*, *167*(2), 419–429.

Humphrey, N. K. (1976). The social function of intellect. In Hinde, R. A., and Bateson, P. P. G. (Eds.). *Growing points in ethology* (pp. 303-317). Cambridge MA: Cambridge University Press.

Hutto, D. D. (2008). *Folk psychological narratives. The sociocultural basis of understanding reasons.* Cambridge MA: MIT Press.

—— (2011). Elementary mind minding, enactivist-style. In Seeman, A. (Ed.). *Joint attention: New developments in psychology, philosophy of mind, and social neuroscience* (pp. 307-342). Cambridge MA: MIT Press.

Hutto, D. D., and Myin, E. (2017). *Evolving enactivism: Basic minds meet content*. Cambridge MA: MIT Press.

Hutto, D. D., and Satne, G. (2015). The natural origins of content. *Philosophia*, *43*(3), 521-536.

Chudek, M., and Henrich, J. (2011). Culture–gene coevolution, norm-psychology and the emergence of human prosociality. *Trends in Cognitive Sciences*, *15*(5), 218-226.

Jary, M. (2010). Assertion andfalse-belief attribution. *Pragmatics & Cognition*, *18*(1), 17-39.

—— (2018). Lying and assertion. In Meibauer, J. (Ed.). *The Oxford handbook of lying* (pp. 109-119). Oxford: Oxford University Press.

Kahneman, D. (2003). Maps of bounded rationality: psychology for behavioral economics. *American Economic Review, 93(*5), 1449–1475.

Kahneman, D. (2011). *Thinking, fast and slow.* New York: Farrar, Straus & Giroux.

Kant, I. (1781). *Kritik der reinen Vemunft. Immanuel Kant. Werke in zehn Banden. Bd3/4*. Darmstadt: Wissenschaftliche Buchgesellschaft.

Kelp, C. (2018). Assertion: a function first account. *Noûs*, *52*(2), 411-442.

Kern, A., and Moll, H. (2017). On the transformative character of collective intentionality and the uniqueness of the human. *Philosophical Psychology*, *30*(3), 319-337.

Knight, C. (2014). Language and symbolic culture: an outcome of hunter-gatherer reverse dominance. In Dor, D. E., Knight, C. E., and Lewis, J. E. (Eds.). *The social origins of language* (pp. 228-246). Oxford: Oxford University Press.

Koreň, L. (2012). Normatívnosť tvrdenia. *Teorie Vědy/Theory of Science*, *34*(1), 25-52.

—— (2016). Joint intentionality. *Journal of Social Ontology*, *2*(1), 75-85.

—— (2018). Propositional contents and the logical space. In Beran, O., Kolman, V., and Koreň, L. (Eds.). *From rules to meanings: New essays on inferentialism* (pp. 196-218). New York: Routledge.

—— (2019). Have Mercier and Sperber Untied the Knot of Human Reasoning? *Inquiry*. DOI: 10.1080/0020174X.2019.1684988.

Koreň, L., and Kolman, V. (2018). Introduction: Inferentialism's years of travel and its logico-philosophical calling. In Beran, O., Kolman, V., and Koreň, L. (Eds.). *From Rules to Meanings: New Essays on Inferentialism* (pp. 1-45). New York: Routledge.

Koreň, L, Schmid, H. B., Townsend, L., and Stovall, P. (Eds.) (2020). *Groups, norms and practices*. Dordrecht: Springer.

Kornblith, H. (2012). *On reflection*. Oxford: Oxford University Press.

Koziolek, N. (2017). Inferring as a way of knowing. *Synthese*. DOI: 10.1007/s11229-017-1632-4

Krupenye C., Kano F., Hirata S., Call J., and Tomasello M. (2016). Great apes anticipate that other individuals will act according to false beliefs. *Science, 354*(6308), 110–114.

Krupenye, C., and Call, J. (2019). Theory of mind in animals: Current and future directions. *Wiley Interdisciplinary Reviews: Cognitive Science*, *10*(6), e1503.

Kukla, R., and Lance, M. (2009). *"Yo!" and "Lo!": The pragmatic topography of the space of reasons*. Cambridge MA: Harvard University Press.

Kusch, M. (2011). Knowledge and certainties in the epistemic state of nature. *Episteme*, *8*(1), 6-23.

Kvanvig, J. (2011). Norms of assertion. In Brown and Cappelen (Eds.) (2011), pp. 233–50.

Lackey, J. (2008). *Learning from words: Testimony as a source of knowledge*. Oxford: Oxford University Press.

Leavens, D. A. (2011). Joint attention: twelve myths. In Seeman, A. (Ed.). *Joint attention: New developments in psychology, philosophy of mind, and social neuroscience* (pp. 43-72). Cambridge MA: MIT Press.

Laland, K. N. (2018). *Darwin's unfinished symphony: how culture made the human mind*. Princeton: Princeton University Press.

Lamm, E. (2014). Forever united: the co-evolution of language and normativity. In Dor, D. E., Knight, C. E., and Lewis, J. E. (Eds.). *The social origins of language* (pp. 267-283). Oxford: Oxford University Press.

Liddle, B., and Nettle, D. (2006). Higher-order theory of mind and social competence in school-age children. *Journal of Cultural and Evolutionary Psychology*, *4*(3-4), 231-244.

Loeffler, R. (2018). *Brandom*. New York: John Wiley & Sons.

Lohmann, H., and Tomasello, M. (2003). The role of language in the development of false belief understanding: A training study. *Child Development*, *74*(4), 1130-1144.

Luo, Y., and Baillargeon, R. (2007). Do 12.5-month-oldinfants consider what objects others can see when interpreting their actions? *Cognition, 105*(3), 489–512.

Macbeth, D. (2010). Inference, meaning, and truth in Brandom, Sellars, and Frege. In Wanderer, J., and Weiss, B. (Eds.). *Reading Brandom: On Making it Explicit* (pp. 197-212). New York: Routledge.

Machery. E. (2017). Plasticity and modularity. In Joyce, R. (Ed). *The Routledge handbook of evolution and philosophy* (pp. 268-281). New York: Routledge.

MacFarlane, J. (2003). Future contingents and relative truth. *The Philosophical Quarterly*, *53*(212), 321-336.

—— MacFarlane, J. (2005). Making sense of relative truth. *Proceedings of the Aristotelian Society, 105*(1), 305-323.

—— (2011). *What is assertion?* In Brown and Cappelen (Eds.) (2011), pp. 79-96.

Maitra, I. (2011). Assertion, norms, and games. In Brown and Cappelen (Eds.) (2011), pp. 277-296.

McDowell, J. (1996). *Mind and world*. Cambridge MA: Harvard University Press.

—— (1997). Brandom on representation and inference. *Philosophy and Phenomenological Research* , *57*(1), 157–162.

—— (2008). Motivating inferentialism: Comments on *Making it explicit* (Ch. 2). In Stekeler-Weithofer, P. (Ed.). *The pragmatics of Making it Explicit* (pp. 209–229). Amsterdam: John Benjamins.

McHugh, C., and Way, J. (2016). Against the taking condition. *Philosophical Issues*, *26(*1), 314-331.

McKinnon, R. (2013). The supportive reasons norm of assertion. *American Philosophical Quarterly*, *50*(2), 121-135.

Meltzoff, A. N., and Brooks, R. (2008). Self-experience as a mechanism for learning about others: A training study in social cognition. *Developmental Psychology*, *44*, 1257–1265.

Mercier, H. (2011). Reasoning serves argumentation in children. *Cognitive Developmen, 26*(3), 177–191.

—— (2012). Looking for arguments. *Argumentation, 26*(3), 305-324.

Mercier, H., Bernard, S., and Clément, F. (2014). Early sensitivity to arguments: How preschoolers weight circular arguments. *Journal of Experimental Child Psychology*, *125*, 102-109.

Mercier, H., and Sperber, D. (2009). Intuitive and reflective inferences. In Evans and Frankish (Eds.) (2009), pp. 149–170.

—— (2011). Why do humans reason? Arguments for an argumentative theory. *Behavioral and Brain Sciences*, *34*(2): 57–74.

—— (2012). Reasoning as a social competence. In Landemore, H., and Elster, J. (Eds.). *Collective wisdom principles and mechanisms* (pp. 368-392). New York: Cambridge University Press.

—— (2017). *The enigma of reason*. Cambridge MA: Harvard University Press.

—— (2018). Why a modular approach to reason? *Mind and Language, 33*(5), 533-541.

Millikan, R. G. (1984). *Language, thought, and other biological categories: New foundations for realism*. Cambridge MA: MIT press.

—— (2005). *Language: A biological model*. Oxford: Oxford University Press.

Miller, G. (2011). *The mating mind: How sexual choice shaped the evolution of human nature*. New York: Anchor Books.

Millson, J. (2014). Queries and assertions in minimally discursive practices. In *Questions, discourse, and dialogue: 20 years after Making it Explicit—Proceedings of AISB50.* http://doc.gold.ac.uk/aisb50/.

Mithen, S. J. (1996). *The prehistory of the mind a search for the origins of art, religion and science*. London and New York: Thames and Hudson.

Moll, H., and Tomasello, M. (2007a). Cooperation and human cognition: the Vygotskian intelligence hypothesis. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *362*(1480), 639-648.

Moll, H., and Tomasello, M. (2007b). How 14-and 18-month-olds know what others have experienced. *Developmental Psychology*, *43*(2), 309.

Moll, H., Carpenter, M., and Tomasello, M. (2007). Fourteen-month-olds know what others experience only in joint engagement. *Developmental Science*, *10*(6), 826-835.

Moll, H., Richter, N., Carpenter, M., and Tomasello, M. (2008). Fourteen-month-olds know what "we" have shared in a special way. *Infancy*, *13*(1), 90-101.

Moll, H., and Meltzoff, A. N. (2011). Joint attention as the fundamental basis of nderstanding Perspectives. In A. Seemann (Ed.). *Joint attention: New developments in psychology, philosophy of mind, and social neuroscience* (pp. 393-414). Oxford: Oxford University Press.

Moll, H., and Kadipasaoglu, D. (2013). The primacy of social over visual perspective-taking. *Frontiers in Human Neuroscience*, *7*, 558.

Moll, H., Meltzoff, A.N., Merzsch, K., and Tomasello, M. (2013). Taking versus confronting visual perspectives in preschool children. *Developmental Psychology*, *49*(4), 646-654.

Moll, H. (2018). The transformative cultural intelligence hypothesis: Evidence from young children's problem-solving. *Review of Philosophy and Psychology*, *9*(1), 161-175.

Mody, S., and Carey, S. (2016). The emergence of reasoning by the disjunctive syllogism in early childhood. *Cognition*, *154*, 40-48.

Moore, R. (2017a). Gricean communication and cognitive development. *The Philosophical Quarterly*, *67*(267), 303-326.

Moore, R. (2017b). Social cognition, stag hunts, and the evolution of language. *Biology & Philosophy*, *32*(6), 797-818.

Moore, R. (2018a). Gricean communication, joint action, and the evolution of cooperation. *Topoi*, *37*(2), 329-341.

Moore, R. (2018b). Gricean communication, language development, and animal minds. *Philosophy Compass*, *13*(12), 125-50.

Müller, A. (2019). Reasoning and normative beliefs: not too sophisticated. *Philosophical Explorations*, *22*(1), 2-15.

Myers, R. H., and Verheggen, C. (2016). *Donald Davidson's Triangulation Argument: A Philosophical Inquiry*. New York: Routledge.

Neale, S. (1992). Paul Grice and the philosophy of language. *Linguistics and Philosophy*, *15*(5), 509-559.

Norman, A. (2016). Why we reason: intention-alignment and the genesis of human rationality. *Biology & Philosophy*,, *31*(5), 685-704.

Olson, D. R. (1988). On the origins of beliefs and other intentional states in children. In Astington, J. W., Harris, P., and Olson, D. R. (Eds.). *Developing theories of mind* (pp. 414–426). Cambridge MA: Cambridge University Press.

Pagin, P. (2004). Is assertion social?. *Journal of Pragmatics*, *36*(5), 833-859.

—— (2016). Problems with norms of assertion. *Philosophy and Phenomenological Research*, *93*(1), 78-207.

Pacherie, E. (2011). Framing joint action. *Review of Philosophy and Psychology*, *2(*2), 173–192.

—— (2013). Intentional joint agency: Shared intention lite. *Synthese, 190*(10), 1817-1839.

Pearl, J., and Mackenzie, D. (2018). *The book of why: the new science of cause and effect*. New York: Basic Books.

Peirce, C.S. (1958). *Collected papers: Science and philosophy and reviews, correspondence, and bibliography* (Vol. 7). Cambridge MA: Belknap Press of Harvard University Press.

Penn, D. C., and Povinelli, D. J. (2007). On the lack of evidence that non-human animals possess anything remotely resembling a 'theory of mind. *Philosophical Transactions of the Royal Society of London B: Biological Sciences*, *362*(1480), 731–744.

Peregrin, J. (2014). *Inferentialism: Why rules matter*. Basingstoke: Palgrave Macmillan.

—— (2020) Normative mindshaping and the normative niche. In Koreň et al. (Eds.) (2020).

Piaget, J. (1951). *The child's conception of the world*. Lanham, MD: Roman & Littlefield.

Onishi, K. H., and Baillargeon, R. (2005). Do 15-month-old infants understand false beliefs?. *Science*, *308*(5719), 255-258.

Origgi, G., and Sperber, D. (2000). Evolution, Communication, and the proper function of language. In Carruthers, P., and Chamberlain, A. (Eds). *Evolution and the Human Mind: Language, Modularity and Social Cognition* (pp. 140-169). Cambridge UK: Cambridge University Press.

Perner, J. (1991). *Understanding the representational mind*. Cambridge MA: The MIT Press.

—— (2012). MiniMeta-: In search of minimal criteria for metacognition. In Beran, M., Brandl, J. L., Perner, J., and Proust, J. (Eds.). *Foundations of metacognition* (pp. 94-116). Oxford: Oxford University Press.

Perner, J., and Wimmer, H. (1985). "John thinks that Mary thinks that…" attribution of second-order beliefs by 5-to 10-year-old children. *Journal of Experimental Child Psychology*, *39*(3), 437-471.

Perner, J., Brandl, J. L., and Garnham, A. (2003). What is a perspective problem? Developmental issues in belief ascription and dual identity. *Facta Philosophica*, *5*, 355–378.

Perner, J., and Doherty, M. (2005). Do infants understand that external goals are internally represented?. *Behavioral and Brain Sciences*, *28*(5), 710-711.

Perner, J. and Roessler, J. (2012). From infants' to children's appreciation of belief. *Trends in Cognitive Sciences*, *16*(10), 519-525.

Perner, J., and Esken, F. (2015). Evolution of human cooperation in *Homo Heidelbergensis*: Teleology versus mentalism. *Developmental Review*, *38*, 69-88.

Perner, J., Priewasser, B., and Roessler, J. (2018). The practical other: teleology and its development. *Interdisciplinary Science Reviews*, *43*(2), 99-114.

Pettit, P. (2007). Rationality, reasoning and group agency. *Dialectica*, *61*(4), 495-519.

—— (2016). Broome on reasoning and rule-following. *Philosophical Studies 173*(12), 3373-3384.

Povinelli, D. J., and Vonk, J. (2004). We don't need a microscope to explore the chimpanzee's mind. *Mind & Language, 19*(1), 1-28.

Price, H. (1983). Sense, assertion, Dummett, and denial. *Mind*, *92*(366), 161–173.

—— (1988). *Facts and the function of truth*. Oxford, UK; New York, NY: Basil Blackwell.

—— (1990). Why 'Not'?. *Mind, 99*(394), 221–238.

—— (2011). Truth as a convenient friction. In *Naturalism without mirrors* (pp. 163-183). Oxford: Oxford University Press.

Queloz, M. (2020). Revealing Social Functions through Pragmatic Genealogies. In Hufendiek, R., James, D., and Raphael, V. R. (Eds.). *Social Functions in Philosophy: Metaphysical, Normative, and Methodological Perspectives*. (pp. 200-18). London: Routledge.

Rakoczy, H. (2006). Pretend play and the development of collective intentionality. *Cognitive Systems Research*, *7*(2-3), 113-127.

—— (2010). From thought to language to thought: Towards a dialectical picture of the development of thinking and speaking. *Grazer Philosophische Studien*, *81*(1), 77-103.

Rakoczy, H., and Tomasello, M. (2007). The ontogeny of social ontology: Steps to shared intentionality and status functions. In *Intentional acts and institutional facts* (pp. 113-137). Dordrecht: Springer.

Rakoczy, H., Warneken, F., and Tomasello, M. (2008). The sources of normativity: young children's awareness of the normative structure of games. *Developmental Psychology*, *44*(3), 875.

Rakoczy, H., Warneken, F., and Tomasello, M. (2009). Young children's selective learning of rule games from reliable and unreliable models. *Cognitive Development*, *24*(1), 61-69.

Rakoczy, H., and Tomasello, M. (2009). Done wrong or said wrong? Young children understand the normative directions of fit of different speech acts. *Cognition*, *113*(2), 205-212.

Rakoczy, H., and Schmidt, M. F. (2013). The early ontogeny of social norms. *Child Development Perspectives*, *7*(1), 17-21.

Rescorla, M. (2009a). Epistemic and dialectical regress. *Australasian Journal of Philosophy*, *87*(1), 43-60.

—— (2009b). Assertion and its constitutive norms. *Philosophy and Phenomenological Research*, *79*(1), 98-130.

Rich, P., and Zollman, K. J. (2016). Honesty through repeated interactions. *Journal of Theoretical Biology*, 395, 238-244.

Richard, M. (2019). Is reasoning a form of agency?. In Jackson, M. B., and Jackson, B. B. (Eds.). *Reasoning: New essays on theoretical and practical thinking*.(pp. 91-100). Oxford: Oxford University Press.

Richerson, P. J., and Boyd, R. (2008). *Not by genes alone: How culture transformed human evolution*. Chicago: University of Chicago Press.

Ripley, D. (2011). Negation, denial, and rejection. *Philosophy Compass*, *6*(9), 622–629.

Roessler, J., and Perner, J. (2013). Teleology: Belief as perspective. In Baron-Cohen, S., Tager-Flusberg, H., and Lombardo, M. (Eds.). *Understanding other minds: Perspectives from developmental social neuroscience* (pp. 35-51). Oxford: Oxford University Press.

Rorty, R., and Price, H. (2010). Exchange on "Truth as convenient friction. In De Caro, M., and Macarthur, D. (Eds.). *Naturalism and normativity* (pp. 253-258). New York: Columbia University Press.

Rumfitt, I. (2000). "'Yes' and 'No'." *Mind*, *109*(436), 781–823.

Ryle, G. (1950). 'If ,' 'So,' and 'Because'. In Black, M. (Ed.). *Philosophical Analysis* (pp. 323–340). Ithaca, NY: Cornell University Press.

Sabbagh, M.A., and Baldwin, D. (2005). Understanding the role of communicative intentions in word learning. In Eilan, N., Hoerl, C., McCormack, T., and Roessler, J. (Eds.). *Joint attention: Communication and other minds: Issues in philosophy and psychology* (pp.165-184). Oxford: Oxford University Press.

Samuelson, L.K., and Smith, L.B. (1998). Memory and attention make smart word learning: An alternative account of Akhtar, Carpenter, and Tomasello. *Child Development*, *69*(1), 94-104.

Satne, G. (2016). A two-step theory of the evolution of human thinking. *Journal of Social Ontology*, *2*(1), 105-116.

Samuels, R. (2012). Massive Modularity. In Margolis, E., Samuels, R., and Stich, S. (Eds.). *Oxford handbook of philosophy of cognitive science* (pp. 60-91). Oxford: Oxford University Press.

Scaife, M., and Bruner, J. S. (1975). The capacity for joint visual attention in the infant. *Nature*, *253*(5489), 265-266.

Schmidt, M. F., Rakoczy, H., and Tomasello, M. (2011). Young children attribute normativity to novel actions without pedagogy or normative language. *Developmental Science*, *14*(3), 530-539.

Schmidt, M. F., and Tomasello, M. (2012). Young children enforce social norms. *Current Directions in Psychological Science*, *21*(4), 232-236.

Schmidt, M. F., Butler, L. P., Heinz, J., and Tomasello, M. (2016). Young children see a single action and infer a social norm: Promiscuous normativity in 3-year-olds. *Psychological Science*, *27*(10), 1360-1370.

Schmidt, M. F., and Rakoczy, H. (2018). Developing an understanding of normativity. Rietveld, E., Denys, D., Van Westen, M., and de Bruin, N. (Eds.). *Oxford handbook of cognition: Embodied, embedded, enactive and extended*.(pp. 685-706). Oxford: Oxford University Press.

Schmidt, M. F., and Rakoczy, H. (2018). On the uniqueness of human normative attitudes. In Roughley, N., and Bayertz, K. (Eds.). *The normative animal? On the anthropological significance of social, moral, and linguistic norms* (pp. 121-138). Oxford: Oxford University Press.

Scott, R. M., and Baillargeon, R. (2017). Early false-belief understanding. *Trends in Cognitive Sciences*, *21*(4), 237-249.

Scott-Phillips, T. (2015). *Speaking our minds: Why human communication is different, and how language evolved to make it special*. New York: Palgrave Macmillan.

Searle, J. (1990). Collective intentions and action. In Cohen, P., Morgan, J., and Pollack, M.E. (Eds.). *Intentions in communication*. Cambridge MA: Bradford Books, MIT Press.

—— (1995). *The construction of social reality*. New York: The Free Press.

—— (2010). *Making the social world: The structure of human civilization*. New York: Oxford University Press.

Sellars, W. (1949). Language, rules and behavior. In Hook, S. (Ed.). *John Dewey: Philosopher of science and freedom* (pp. 289–315). New York: Barnes & Noble.

—— (1953). Inference and meaning. *Mind, 62*(247), 313–338.

—— (1954). Some reflections of language games. *Philosophy of Science, 21*(3), 204–228.

—— (1956). Empiricism and the philosophy of mind. In Feigl, H., and Scriven, M. (Eds.). *Minnesota Studies in the Philosophy of Science, Volume I*. (pp. 253–329). Minneapolis, MN: University of Minnesota Press.

—— (1963). Philosophy and the scientific image of man. In Colodny, R. (Ed.). *Science, perception, and reality* (pp. 35–77). Atascadero, CA: Ridgeview Publishing.

—— (1981). Mental events. *Philosophical Studies*, *39*(4), 325-345.

Shapiro, L. (2014). Assertoric force perspectivalism: Relativism without relative truth. *Ergo*, *1*, 139-168.

—— (2020). Commitment accounts of assertion. In Goldberg, S. (Ed.). *Oxford handbook of assertion*. Oxford: Oxford University Press. DOI: 10.1093/oxfordhb/9780190675233.013.3.

Simion, M., and Kelp, C. (2019). Assertion: the constitutive norms view. In Goldberg, S. (Ed.). *Oxford handbook of assertion*. Oxford: Oxford University Press. DOI: 10.1093/oxfordhb/9780190675233.013.2.

Sloman, S. A. (1996). The empirical case for wo systems of reasoning. *Psychological Bulletin*, *119*(1): 3–22.

Smiley, T. (1996). Rejection. *Analysis*, *56*(1), 1–9.

Smith, J. J., and Wald, B. (2019). Collectivized intellectualism. *Res Philosophica*, 96(2), 199-227.

Smith, M. J., and Harper D. (2004). *Animal signals*. New York, U.K: Oxford University Press.

Smith, J. J., and Wald, B. (2019). Collectivized intellectualism. *Res Philosophica*, *96*(2), 199-227.

Sodian, B., Thoermer, C., and Metz, U. (2007). Now I see it but you don't: 14-month-olds can represent another person's visual perspective. *Developmental Science*, *10*, 199–204.

Southgate, V., Senju, A., and Csibra, G. (2007). Action anticipation through attribution of false belief by 2-year-olds. *Psychological Science*, *18*(7), 587-592.

Spelke, E. S. (2003). What makes us smart? Core knowledge and natural Language. In Gentner, D., and Goldin-Meadow, S. (Eds.). *Language in mind: Advances in the study of language and thought* (pp. 277-311). Cambridge MA: MIT Press.

Spelke, E. S., and Kinzler, K. D. (2007). Core knowledge. *Developmental science*, *10*(1), 89-96.

Sperber, D., and Wilson, D. (1986). *Relevance: Communication and cognition*. Cambridge MA: Harvard University Press.

—— (2002). Pragmatics, modularity and mind-reading. *Mind & Language*, *17*, 3-23.

Sperber, D. (1996). *Explaining culture: A naturalistic approach*. Cambridge MA: Cambridge University Press.

—— (2000). Metarepresentations in an evolutionary perspective. In Sperber, D. (Ed.). *Metarepresentations: A multidisciplinary perspective* (pp. 117-137). New York: Oxford University Press.

—— (2001). An evolutionary perspective on testimony and argumentation. *Philosophical Topics*, *29*(1/2), 401-413.

—— (2005). Modularity and relevance: How can a massively modular mind be flexible and context-sensitive? In Carruthers, P., Laurence, S., and Stich, S. (Eds.). *The innate mind: Structure and contents* (pp. 53–68). New York: Oxford University Press.

—— Sperber, D., Clément, F., Heintz, C., Mascaro, O., Mercier, H., Origgi, G., and Wilson, D. (2010). Epistemic vigilance. *Mind & Language*, *25*(4), 359-393.

Sripada, C. S., and Stich, S. (2006). A framework for the psychology of norms. Carruthers, P., Laurence S.E., and Stich S. (Eds.). *The innate mind 2* (pp. 280-301). Oxford: Oxford University Press.

Stanovich, K. E. (2004). *The robot's rebellion: Finding meaning in the age of Darwin*. Chicago: University of Chicago Press.

Sterelny, K. (2003). *Thought in a hostile world: The evolution of human cognition*. Oxford: Blackwell.

—— (2012). *Evolved apprentice*. Cambridge MA: MIT Press.

—— (2018). Why reason? Hugo Mercier's and Dan Sperber's *The enigma of reason: A new theory of human understanding*. *Mind and Language, 33*(5), 502-512.

Strawson, P. F. (1959). *Individuals*. London: Methuen and Co.

—— (1964). Intention and convention in speech acts. *The Philosophical Review*, *73*(4), 439-460.

—— (1966). *The Bounds of Sense: An Essay on Kant's Critique of Pure Reason*. London: Methuen and Co.

Suchak, M., Eppley, T. M., Campbell, M. W., Feldman, R.A., Quarles, L. F., and de Waal, F. B. (2016). How chimpanzees cooperate in a competitive world. *Proceedings of the National Academy of Sciences*, *113*(36), 10215-10220.

Surian, L., Caldi, S., and Sperber, D. (2007). Attribution of beliefs by 13-month-old infants. *Psychological Science*, *18*(7), 580-586.

Tennie, C., Call, J., and Tomasello, M. (2006). Push or pull: Imitation vs. emulation in great apes and human children. *Ethology*, *112*(12), 1159-1169.

Thompson, V. (2014). What intuitions are… and are not. *Psychology of Learning and Motivation*, *60*, 35-75.

Tollefsen, D. (2005). Let's pretend. Children and joint action. *Philosophy of the Social Sciences*, *35*(1), 75–97.

Tomasello M., and J. Call (1997). *Primate cognition*. New York: Oxford University Press.

Tomasello, M., and Rakoczy, H. (2003). What makes human cognition unique? From individual to shared to collective intentionality. *Mind & Language*, *18*(2), 121-147.

Tomasello, M. (1999). *The cultural origins of human cognition*. Cambridge MA: Harvard University Press.

— (2008). *Origins of human communication*. Cambridge MA: Harvard University Press.

—— (2014). *A natural history of human thinking*. Cambridge MA: Harvard University Press.

—— (2016). *A natural history of human morality*. Cambridge MA: Harvard University Press.

—— (2018). How children come to understand alse beliefs: A shared intentionality account. *Proceedings of the National Academy of Sciences USA*, *115*, 8491–8498.

—— (2019). *Becoming human.* Cambridge MA: Harvard University Press.

—— (2020). The Ontogenetic Foundations of Epistemic Norms. *Episteme*. DOI: https://doi.org/10.1017/epi.2019.50.

Tomasello, M., and Rakoczy, H. (2003). What makes human cognition unique? From individual to shared to collective intentionality. *Mind & Language*, *18*(2),121-147.

Tomasello, M., Carpenter, M., Call, J., Behne, T., and Moll, H. (2005). Understanding and sharing intentions: The origins of cultural cognition. *Behavioral and Brain Sciences*, *28*(05), 675-691.

Tomasello, M. and Herrmann, E. (2010). Ape and human cognition: What's the difference?. *Current Directions in Psychological Science*, *19*(1), 3-8.

Unger, P. (1975). *Ignorance: A case for scepticism*. Oxford: Oxford University Press.

Valaris, M. (2014). Reasoning and regress. *Mind, 123*(489), 101–127.

Wanderer, J. 2008. *Robert Brandom*. Stockfield: Acumen Publishing Limited.

Warneken, F., Chen, F., and Tomasello, M. (2006). Cooperative activities in young children and chimpanzees. *Child Development, 77*(3), 640–663.

Wason, P. C. (1968). Reasoning about a rule. *Quarterly Journal of Experimental Psychology*, *20*(3), 273–281.

Watson, G. (2004). Asserting and promising. *Philosophical Studies*, *117*(1/2), 57-77.

Weiner, M. 2005). Must We Know What We Say? *Philosophical Review*, *114*(2), 227-251.

Weiskopf, D. A. (2010). Concepts and the modularity of thought. *Dialectica*, *64*(1), 107-130.

Weisskopf, D. A., and Aizawa, K. (2015). *An introduction to the philosophy of psychology*. Cambridge: Cambridge University Press.

Wellman, H. M., Cross, D., and Watson, J. (2001). Meta- analysis of theory of mind development: The truth about false belief. *Child Development*, *72*(3), 655684.

Wellman, H. M., 2014. *Making minds: How theory of mind develops*. Oxford: Oxford University Press.

Whiten, A., and Byrne, R, W. (Eds.) (1988). *Machiavellian intelligence: Social expertise and the evolution of intellect in monkeys, apes, and humans*. New York: Oxford University Press.

—— (Eds.) (1997). *Machiavellian intelligence II: Extensions and evaluations* (Vol. 2). Cambridge: Cambridge University Press.

Whiten, A., and Van Schaik, C. P. (2007). The evolution of animal 'cultures' and social intelligence. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *362*(1480), 603-620.

Whiten, A., McGuigan, N., Marshall-Pescini, S., and Hopper, L.M. (2009). Emulation, imitation, over-imitation and the scope of culture for child and chimpanzee. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *364*(1528), 2417-2428.

Whiting, D. (2013). Stick to the Facts: On the Norms of Assertion. *Erkenntnis*, *78*(4), 847-867.

Williams, B. A. O. (2002). *Truth & truthfulness: An essay in genealogy*. Princeton: Princeton University Press.

Williamson, T. (1996). Knowing and asserting. *The Philosophical Review*, *105*(4), 489-523.

—— (2000). *Knowledge and its Limits*. Oxford: Oxford University Press.

Wimmer, H., and Perner, J. (1983). Beliefs about beliefs: Representation and constraining function of wrong beliefs in young children's understanding of deception. *Cognition*, *13*(1), 103-128.

Wittgenstein, L. (1953). *Philosophical investigations*. Oxford: Blackwell.

Wobber, V., Herrmann, E., Hare, B., Wrangham, R., and Tomasello, M. (2014). Differences in the early cognitive development of children and great apes. *Developmental Psychobiology*, *56*(3), 547-573.

Woodward, A. L. (1998). Infants selectively encode the goal object of an actor's reach. *Cognition*, *69*(1), 1-34.

Woodward, J., and Cowie, F. (2004). The mind is not (just) a system of modules shaped (just) by natural selection. In Gangestad, S. W., and Simpson, J. A. (Eds.). *Contemporary debates in philosophy of science* (pp. 312-334). Malden, MA: Blackwell.

Williams, M. (2001). *Problems of knowledge: A critical introduction to epistemology*. Oxford: Oxford University Press.

—— (2015a). Knowledge in practice. In Henderson, D. K., and Greco, J. (Eds.). *Epistemic evaluation: purposeful epistemology* (pp. 161-185). Oxford: Oxford University Press.

—— (2015b). What's so special about human knowledge? *Episteme*, *12*(2), 249-268.

Wittgenstein, L. (1953). *Philosophical investigations*. London: Basil and Blackwell.

Woodward, A. L., Sommerville, J. A., and Guajardo, J. J. (2001). How infants make sense of intentional action. In Malle, B. F., Moses, L. J., and Baldwin, D. A. (Eds.). *Intentions and intentionality: Foundations of social cognition* (pp. 149-169). Cambridge MA: MIT Press.

Wright, C. (2014). Comment on Paul Boghossian, "What is inference". *Philosophical Studies*, *169*(1), 27–37.

Zahavi, A., and Zahavi, A. (1997). *The handicap principle: a missing piece of Darwin's puzzle.* New York: Oxford University Press.

Zawidzki, T. W. (2013). *Mindshaping: A new framework for understanding human social cognition*. Cambridge MA: MIT Press.