



LUND UNIVERSITY

Leave inference alone

Direct inferential social cognition

Lo Presti, Patrizio

Published in:
Theory & Psychology

DOI:
[10.1177/0959354320908337](https://doi.org/10.1177/0959354320908337)

2020

[Link to publication](#)

Citation for published version (APA):

Lo Presti, P. (2020). Leave inference alone: Direct inferential social cognition. *Theory & Psychology, 30*(2), 186-201. <https://doi.org/10.1177/0959354320908337>

Total number of authors:
1

General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117
221 00 Lund
+46 46-222 00 00

Leave inference alone: Direct inferential social cognition

Theory & Psychology
2020, Vol. 30(2) 186–201

© The Author(s) 2020

Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0959354320908337
journals.sagepub.com/home/tap



Patrizio Lo Presti 

Lund University

Abstract

Direct perception and theory–theory approaches to social cognition are opposed with respect to whether social cognition is inferential. The latter argues that it is inferential, the former that it is not. This article argues that the opposition in terms of inference is mistaken. A sense of inference is specified on which social cognition can be inferential and directly perceptual. Arguing for inferential social cognition does not commit to a defense of indirect social cognition if inferential access to other minds can be direct. Contrary convictions are symptomatic of working with too simplistic a notion of inference. The dispute between direct and inferentialist social cognition is one in which both sides can be right. The argument, then, is that inferentialism should not be called on to witness in favor or disfavor of advocates of either direct or indirect social cognition.

Keywords

affordance, direct access, inference, Sellars, social cognition

In this article, I make two points. First, there is a sense of “inference” and, relatedly, a version of inferentialism, neglected in social cognition research. Expounding it is the first point. This is not an argument that other senses are simply wrong, but it shows that the issue of whether social cognition is direct and perceptual isn’t settled by whether it is inferential. Second, the sense of inference and inferentialism arrived at in the first step suggests that social cognition can be directly perceptual and inferential. This approach subsumes opposed inferential and direct perception accounts.

On the whole, this paper contributes to a recent request by Gallagher and Allen (2018, p. 2643), to clarify how to understand inference (among other concepts) in order to sort out basic issues, for cognition in general and for social cognition in particular. The

Corresponding author:

Patrizio Lo Presti, PhD, Department of Philosophy, Lund University, Helgonavägen 3D, 221 00 Lund SE, Sweden.

Email: Patrizio.Lo_Presti@fil.lu.se

concept of inference and version of inferentialism here pursued suggests that social cognition can be directly perceptual and inferential.

The opposition

Direct access and inferentialist approaches to social cognition are typically opposed. This section spells out why. Focus is on direct perception theory (DPT) and theory–theory (TT). Later sections argue that the opposition in terms of inference is spurious and suggest an inferentialist approach that is directly perceptual.

Characteristic of TT is the claim that knowledge of other minds is a capacity to infer covert mental episodes from observed behavior (e.g., Baron Cohen, 1995; Gopnik & Metzloff, 1997; Gordon, 2008, p. 220). The relevant inferential capacity for social cognition on TT is complex at least, for the following reasons:

1. It is a multistep cognitive act involving behavior-observation, inference, and mental state attribution (reasoning by analogy from experience of mental episodes occurring to oneself in situations similar to the observed).
2. The concluding attribution must accord with rules for how to correctly apply mental state concepts. Not knowing those rules is not mastering the concepts.

For obvious reasons, this capacity for social cognition is exclusive to beings (typically, rational human adults) who are:

3. Capable of counterfactual reasoning, differentiation between feeling and thinking points of view, who understand that different points of view come with qualitative and semantic differences.

On TT, one must be able to think thoughts of the general universalizable form “*if I had been in the observed situation and behaved in the observed way, then I would likely feel and think so-and-so*” in order to properly attribute mental states according to (1) and (2). Hence (3) is necessary for social cognition on TT.

The above stands in clear contrast to a central claim of DPT, namely that other minds are overt in behavior (De Jaegher, 2009; Gallagher, 2008a; Gallagher & Hutto, 2008). DPT doesn’t require any general universalizable reasoning. Others do not first appear “as mere physical entities or inaccessible minds” (Tanaka, 2015, p. 459), which observers must psychologically theorize about to arrive at a judgment about what to think or feel (Davidsen & Fosgerau, 2015).

The idea is that other minds are directly accessible by perceiving responsiveness in shared social environments (Kiverstein, 2015, p. 537). Perceiving others respond the way you would is seeing them think and feel like you in the shared milieu (Rietveld, 2012a, 2012b; Rietveld & Kiverstein, 2014). More radically, perhaps, it has been suggested that DPT allows for perception of collective states of mind (Lo Presti, 2016b, p. 425). Considering that some behavioral responses in a shared social environment (e.g., religious or economic) are responses to objects and events (e.g., holy or monetary objects and events) collectively intended to play significant social or institutional roles (e.g.,

Searle, 2010, 2015), behavioral responses can reveal collective attitudes. Thus, it should be possible to perceive collectively shared states of mind in the context of community if it is possible to perceive individual states of mind in more contained contexts of face-to-face encounters.

Importantly, in DPT, direct perceptual access is non inferential. It is “smart” perception (Gallagher, 2008a, 2008b). For instance, seeing a car doesn’t require auxiliary inferential processes from observed shape, material, reflection, and so forth, to the concluding formation of a judgment in which a concept is predicated of an object: “It’s a car.” Perception of others is likewise supposedly smart in that seeing, for example, a facial expression, doesn’t require auxiliary inferential processes from the geometry of the expression to the concluding formation of a judgment in which a mental state concept is predicated of a subject: “He’s angry.” Social cognition is in the perception already. It doesn’t require a two-step perception–inference process.

Clearly, DPT and TT are opposed. The opposition revolves centrally around inference. In DPT, social cognition is perceptual, noninferential, and direct. In TT, social cognition involves perception as a first step but is a multistep, general, and universalizable inference process, as well as being nondirect.

There are several alternative formulations of the TT–DPT opposition. It can be said that DPT is noncognitivist and noninternalist in claiming that social cognition is ecological, embodied, and situated, whereas TT is cognitivist and internalist in claiming that social cognition is theoretical and internal to isolated individual minds (Gallagher, 2004, 2011; Lo Presti, 2013, pp. 8–10). Also, the manner in which I formulated TT earlier, saying that social cognition is a counterfactual-involving, multistep inferential, and rule-following process, might be called a heavily inferentialist version of TT.¹ Not all theory-theorists agree with it. Some argue that inference is an unconscious process.

To keep the argument focused, attention here is on inference, which is at the core of the opposition.

Inference

In a sense, “inference” is made precise. The aim is to show that inferential knowledge can be direct and perceptual. If it is, the TT–DPT opposition appears spurious with respect to inference. This section closes with a clarification of how the inferentialism informing the present account of inference differs from traditional accounts and recent predictive coding accounts.

To set the scene, James O’Shea’s work on how to understand inference in itself (2011) and in the context of TT (2012) is helpful. O’Shea argues that inference can be direct, if understood as Wilfrid Sellars did (e.g., Amaral, 1989; Sellars, 1956). Sellars’ philosophy of mind is sometimes taken to have anticipated TT. In the next section I will point out, however, that Sellars isn’t hostage to TT. Nevertheless, O’Shea (2012, pp. 180, 192) equips TT with a notion of inference answering a specific kind of objection from direct access theories (e.g., DPT). The objection is that knowledge of other minds is direct and noninferential. We don’t first observe, then theorize, and then attribute mental episodes when we (try to) understand others (e.g., Gallagher & Hutto, 2008, p. 20; Gallagher & Zahavi, 2008, p. 176). We understand, perhaps feel, other-mindedness directly. In

response to that objection, if inference can be direct, as will be argued here, the claim that social cognition is direct doesn't rule out that it is inferential.

This article doesn't take sides in the TT–DPT opposition. The aim is to understand that inference can play as positive a role for DPT as O'Shea (2011, 2012) says it can for TT. Inferentialism isn't by default an ally (or antagonist) to TT (or DPT).

To clarify, focus will be on three distinctions regardless of which feeds the mistaken opposition. The first is between kinds of concepts in terms of differences in using them. The second is between categories of objects in terms of differences in knowing them. The third is between ways of knowing objects and applying concepts in the first two distinctions in terms of differences in direct and indirect knowing. At the intersection of these distinctions, a concept of "inference" is pinpointed that can figure in inferential direct social cognition. The following doesn't amount to an argument that other senses of inference are simply wrong, but to a demonstration that other senses of inference aren't exclusive.

Theoretical and observational concepts

The first distinction is between theoretical and observational concepts. Let's call them T-concepts and O-concepts.

Consider the concept "muon." Muons are subatomic particles not directly observable (by us). The appropriate circumstances for applying the concept is observation of a hooked vapor trail in a cloud chamber which, according to theory, is evidence for the presence of a muon. Thus, the concept applies inferentially, by properly trained observers with the proper technology. "Muon" is a T-concept in that its application is inferential. The concepts of shape and color, etc., involved in judging that something is a vapor trail in a cloud chamber are, in contrast, O-concepts. They apply noninferentially.²

Mastering T- and O-concepts are two ways of access; inferentially, using T-concepts, and noninferentially, using O-concepts.

Inferentialism, of the likes of Sellars and Brandom, doesn't claim that all concept application is inferential. It claims that all concepts must be usable in, and their application justifiable by, inference (Brandom, 2000, pp. 28–29; Sellars, 1956, §36). For instance, I may apply the concept "green" noninferentially in perception of a green object. In that sense, it can be an observational concept. However, mastering the use of the concept requires an ability to justify the application in inferring—for example, if something is green and monochromatic it isn't red. If my saying "The book is green" does not follow from something else, then nothing is said in the saying. And if I can track no such inferential relations, I haven't applied the concept "green."³ Inferentialism, then, doesn't have the consequence that all concept application is inferential but that all concepts must be usable, and the application justifiable, in inferring (cf. Amaral, 1989, pp. 262–263). What capacities for inferential justification and use involve is discussed in a later section.

The first distinction is between two categories of concepts, distinguished in terms of use: T-concepts applied inferentially, on the one hand, and O-concepts applied noninferentially, on the other. Inferentialism isn't the thesis that all concepts are T-concepts, that is, that all concepts apply inferentially. It's the thesis that all concepts must be able to

play a role in inferring (Sellars, 1956, §36), where to master the use of a concept is to know how to track some of its inferential relations even if one doesn't in all or even very many actual cases do so (Brandom, 2004, p. 250).

Theoretical and empirical objects

The second distinction is between categories of knowable things: theoretical, observable but nonobserved objects on the one hand and empirical, observed objects on the other. Let's call them T-objects and E-objects.

Consider black-hole astronomy. Allowing ourselves some slack on technicalities, black holes are nonobserved observables predicted by theory. They are T-objects: nonobserved but, according to theory, observable.⁴ If a black hole has indeed been observed, black holes now belong to the category of E-objects; observed observables. Another example, and a different fate, is phlogiston. Phlogiston was introduced as a T-object; unobserved observable. As science progressed, phlogiston was judged nonexistent. For this reason, in contrast to black holes, Neptune, electrons, and DNA, phlogiston didn't transit from the category of T-objects to the category of E-objects.

This second distinction is between categories of objects in terms of knowing them. It is a methodological, not ontological distinction (Brandom, 2002, p. 362). To say that something is a T-object means that we know it inferentially, not that it has a metaphysical status different from E-objects. And if we get to observe T-objects, it's our relation to them, our methodological categorization, that changes, not them. Thus, that something is a T-object doesn't mean it's unreal, in contrast to E-objects, though it might turn out we were wrong to believe it existed.

That something is an E-object means that it can be known noninferentially by observation. Thus, before the time of supposed observation we might have said that black holes were real, that is, observable, but so far only inferentially known. On the supposition that a black hole has been observed, black holes have transited from the category of T-objects to the category of E-objects. This, again, doesn't mean that the object changes. What changes is the methodological categorization of noninferentially knowable things; it now contains one more member. (In the case of phlogiston, the category of T-objects lost a member when it was established that phlogiston doesn't exist.)

Hence, the ultimate court of appeal on which objects are theoretical and which are empirical is experience, aided by scientific and technological development.

On inferentialism of the stripe expounded here, T-objects that cannot make the transit to the category of E-objects, in the strong sense of "permanently and in principle inaccessible to observation" (Brandom, 2002, p. 363), aren't real. However, things can be real and unobservable for a kind of being (e.g., due to cognitive or technological limitations). Technological advances in experimental science play an important role in the dynamic development of the categorization of T- and E-objects. Telescoping and microscopy, for example, have dramatically changed (and certainly produced debate on whether they have changed) whether objects such as, for example, black holes, belong to the T- or E-category of objects (e.g., Brandom, 2015, pp. 114–116; Hacking, 1983, pp. 170, 178, 188). Thus, we don't know which objects are real and which aren't real, independent of experience, for the simple reason that the methodological categorization of objects into

theoretical (observable but nonobserved) and empirical (observed) is in flux (cf. Steinle, 2002, pp. 420–421). This is as expected. We don't know a priori what exists and what doesn't. Science and experience is the measure of all things, of what is that it is and of what isn't that it isn't, in this regard (Sellars, 1956, §42).

In the context of the first distinction, T-concepts can apply to both T- and E-objects, while O-concepts apply only to E-objects. To illustrate, "muon" is a T-concept: it applies by inference from observed hooked vapor trails. Yet muons are E-objects: observing hooked vapor trails counts as reason for inferring their presence. A properly trained scientist able to noninferentially respond to the observation of a hooked vapor trail by judging that a muon is present counts, in so doing, as seeing a muon.

Direct and indirect knowledge

To complete the homing in on a concept of inference that makes sense of a direct inferentialist yet perceptual approach to social cognition, a third distinction is now added. It is a distinction between direct and indirect knowledge. Let's call it D- and I-knowledge. It cuts across the previous two distinctions.

It is tempting to think that since only T-concepts apply to T-objects, only O-concepts apply to E-objects. Consequently, it's tempting to think that all knowledge of E-objects is D-knowledge because it is noninferential while all knowledge of T-objects is I-knowledge because it is inferential. The temptation stems from seeing the distinctions between T- and O-concepts, on the one hand, and between T- and E-objects, on the other, as parallel. But they aren't, since T-concepts can apply to E-objects. That all T-objects are I-known and all E-objects D-known is therefore mistaken. The distinction between D- and I-knowledge clarifies why.

Consider muons again. We don't observe muons themselves, but a properly trained particle physicist can infer the presence of muons in observing hooked vapor trails. The concept "muon" applies inferentially. Yet the inferential applicability of the concept doesn't imply that knowledge of the object is indirect. The concept may be a T-concept, but its application is direct in perception, yielding direct knowledge.

To illustrate, the distinction between D- and I-knowledge can be approached by analogy to affordances. This isn't meant to address the core issue of whether social cognition is noninferential, but to illustrate that (social) cognition can be direct and perceptual even if inferential.

Objects afford behaviors relative to a kind of animal's embodiment and bodily capacities. The concept "affordance" picks out relations between behavioral and perceptual capacities of kinds of animals and kinds of environments (Costall, 2012, p. 88; Gibson, 1979, pp. 127, 129; Heft, 2013, p. 17). The animal's capacities and environment co-implicate each other. Affordances are such relational co-implications. Thus, some objects afford grasping relative to animals with opposable thumbs, some surfaces afford support relative to animals of certain mass, etc. To respond accordingly, the animal needn't reason about what to do. It reliably responds differentially to perceptual information in the ambient optic array available relative to its embodiment and bodily capacities.

We can gloss what the particle physicist does—in interactions in the lab, the cloud chamber, other scientists, and so on—as responding to affordances for inferring relative

to their capacities in that environment. The particle physicist's reliable disposition to respond differentially to perceived vapor trails gives direct knowledge of the presence of a muon. They perform an action—an inferring—afforded by the directly perceived, in conjunction with their training and interaction with the relevant instruments, which typically involves prior complex inferential knowledge.

Inferring here isn't a conclusion of a prior mediating act but is the doing itself (Brandom, 2000, p. 18). Concept applications are cases of inferences. Inferring the presence of a muon isn't something the scientist does in addition to or between perception as premise and the act of concept application as conclusion. The particle physicist—trained to reliably respond differentially to stimuli in their concrete environment—directly (fallibly) knows that a muon is present. Inferential knowledge is here direct. Thus, we can think of inferences as active doings giving direct knowledge, worldly engagements in environments affording it (Gallagher & Allen, 2018, p. 2634). So, it isn't implied that perception, in the context of experiment or otherwise, is always inferential (cf. Hipólito, 2018). It can be noninferential and involve O-concept application, as, for example, when I see a green object, knowing (fallibly) it is green, or when I see another person in pain, knowing (fallibly) she is in pain. However, and importantly, noninferential perception, yielding D-knowledge, must be usable and justifiably in the context of inferential practice.

Sellars gives the example of seeing a book, something readable, rather than a physical object (Amaral, 1989, p. 263; cf. Sellars, 1979, pp. 317–318).⁵ Like seeing the presence of a muon, this knowledge is direct and perceptual. The perceiving needn't involve inference, but to count as a knowing that the object is a book, the knower must be able to inferentially justify their belief were they to consider it or others to demand it (Sellars, 1956, §36). If they cannot inferentially justify taking the object to be a book—for example, if it is a book then it has at least one author and contains text, and you can browse the pages—then the knower doesn't count as knowing that it's a book, even if they rarely justify taking an object to be a book since they are reliably disposed to perceptually differentiate books from nonbooks.

Let's reconnect to the first two distinctions. To recapitulate, O-concepts apply noninferentially, T-concepts apply inferentially, E-objects are observed observables to which both O- and T-concepts apply, T-objects are nonobserved observables to which only T-concepts apply, and D-knowledge is direct and I-knowledge is indirect.

Since the three distinctions cut across each other, inference is a polysemous concept (cf. Clark, 2016, §6.7). Connecting the three distinctions, 12 possibilities present themselves. Of these, one is of special interest: direct knowledge by theoretical concepts to empirical objects or events. Direct inferential perceptual knowledge of other minds will turn out to be at home in this sense of inference.⁶

Like the polysemous “inference,” inferentialism, too, isn't monolithic. To close this section, the kind of inferentialism informing the present account, and its differences from other versions, is now made precise. This is to show how inferentialism can be different from TT, as well as more recent versions, such as, for example, predictive coding accounts. Four points of divergence between the inferentialism here pursued and other versions are notable.

First, inferring isn't applying or following explicit inferential and universalizable rules (Brandom, 1994, Chapter 1, sect. III, §§1–4). Inference is “material” as opposed to “formal,” which means, roughly, that inferring doesn't require representations of rules saying that such-and-such follows from such-and-such premises. It is not an articulate logical competence (1994, pp. 97–98). Rather, it's a practical know-how to respond to circumstances (e.g., verbal or observational) in ways that can be, but needn't be, articulated as conforming to some rule (Brandom, 2000, pp. 56–57).

Second, inference isn't an “inner” event but a worldly doing as part of active perception; it doesn't take place “in” individual minds or brains,⁷ but is a performance aided by and pursued in engagement with technological artifacts, cultural artifacts, and others in social interaction (cf. Gallagher & Allen, 2018, pp. 2634–2636).

Third, capacities for inferential practice of kinds of beings “turn on features of their embodiment, lives, environment, and history” (Brandom, 2008, pp. 6–7), in the strong sense that were such features different, then inferential practices of a kind of being would be different too.

Inference isn't primarily in the service of predicting behavior of an external environment or social others in an attempt to find hidden causes of sensory information and build “inner” models of an “external” world (Clark, 2016, pp. 191–192).

These are four respects in which the inferentialism here pursued, and the concept of inference it pinpoints, diverges from both traditional and modern internalist predictive coding accounts (e.g., Hohwy, 2013, 2016). More could be mentioned.

This section does not amount to an argument that other conceptions of inference are simply wrong. The aim has been to home in on a concept of inference, and a version of inferentialism, which will next be argued to not be hostage to one side or another in the TT–DPT opposition. Insofar as DPT opposes inferentialism in all senses from which the present version differs, as made clear earlier, it is an open question whether DPT opposes inferentialism in the sense to be proposed next.

Direct inferential social cognition

This section argues that social cognition can be directly perceptual and inferential in a sense of inferring as noninternal, nor brain-bound, but as engagement in social practice. The next and final section considers where, in the context of the TT–DPT opposition, this approach fits. The argument will be that it subsumes both.

To argue that social cognition is perceptually direct yet inferential, we can start by considering a central part of Sellars' “Empiricism and the Philosophy of Mind” (1956).

Sellars (1956) presents the myth of genius Jones and our Rylean ancestors, a behavioristically inclined community in which Jones lives (XII–XVI). The Ryleans think of mind as a manner of knowing how to act, where knowing how to act is revealed in verbal behavior, for example, “I want to drink, and there is water in the glass,” resulting in drinking from the glass. Jones observes, though, that people act goal directedly and often successfully when action isn't preceded by verbal behavior. He hypothesizes that people undergo unobserved “inner episodes” that issue in action (§56). Jones's model for these episodes is verbal behavior, a “language of thought” (Sellars, 1981, §1). It's a model in

that the hypothesized inner episodes function like verbal behavior. Jones doesn't say that they are "inner speech."

Armed with his theory, Jones can explain observed behavior in terms of inner episodes. He develops reliable dispositions to respond differentially to observation of behavior by inferring inner episodes (Sellars, 1956, §59). He sees what others do and thereby sees what they feel, intend, believe, and so on.

The genius of Jones is that others' behavior, as we might put, now affords seeing other minds. In terms of our previous distinctions: Jones knows other minds by T-concepts yielding D-knowledge when he perceives others. Jones and his peers become able to directly perceive each other's minds. Mental episodes have become directly intersubjectively accessible (D-known) objects of perception (E-objects; cf. Sellars, 1956, §§45, 59). Other minds are directly perceptually accessible in the sense that, in perceiving each other, Jones and his followers fallibly know each other's minds. The sense of inference involved is that in which knowers must be able to inferentially justify what they take others to think or feel. Inferential justification might very rarely be an issue, similar to it very rarely being an issue whether we are justified to believe that what we see is a book. But, similar to how we don't count as knowing that something is a book if we cannot produce any inferential justification—for example, by touching it, opening it, and browsing its pages—we don't count as knowing other minds if we cannot justify—for example, by interacting with or asking others.⁸

Knowers must be *able* to justify their taking others to have some mental or affective states and episodes rather than other mental or affective states or none at all when perceiving others, even if actually doing so is rarely an issue. That is, knowledge of other minds must be inferentially justifiable also in case the knower doesn't actually infer. We'll shortly return to what "justification" involves here. In Sellars' (1956) myth, Jones is perceiving other minds even if he rarely inferentially justifies what he takes others to think or feel. That he's capable of doing so, however, is necessary for his counting as knowing. A background of social inferential practice in the context of which reasons for knowledge of other minds can always be an issue is necessary for knowing—but it may very rarely be an issue.

Inference, thus, isn't the way the intellectualist legend (Ryle, 1949/2009, pp. 18–19) construes it; an explicit, inner, rule-governed deliberation, curled up between perception and action. Inference is part of our behavioral economy—a practical mastery, a know-how to do something, to infer, which is often exhibited in worldly social engagement—among others in our repertoire of reliable dispositions to respond differentially when we perceive or otherwise act. To those who worry that this is cognitivism in disguise we can respond, with Schmid (2018, p. 242), that that worry is premised on the mistaken notion of cognition as an "inner realm" when, instead, it should be construed adverbially as ways of doings: deliberating, believing, experiencing, and inferring (cf. Steiner, 2014, p. 444). Hence, inferentialism is neither cognitivism nor intellectualism (e.g., Brandom, 1994, pp. 20–22, 77, 2009, pp. 113, 120).

In this context, what is the verdict with respect to nonhuman animals and children who supposedly cannot, or cannot yet, engage in social practices of inferential justification? The answer is that the present version of inferentialism doesn't say that they are

unable to do so (or that they are so able). Clarification of what is meant by “inferential justification” shows why.

The present account says that social cognition is directly perceptual and inferential in that perceivings give a direct access, functioning as reason for inferences in a social practice the capacity for engagement in which is necessary to count as knowing. On this construal, perceiving other minds is a capacity to reliably respond to others by directly taking them to feel, desire, and intend such and such, where one counts as knowing only if one is able, were the issue to arise, even if it rarely does, to give reasons for what one takes others to feel, desire, intend, and so on. Importantly, and with respect to developmental and comparative issues, social engagement implicitly⁹ aimed to produce responses from others—such as, for example, to comfort, enthuse, excite, or partly disengage—counts as exercising capacities to respond to demands for and to give reasons for taking others to be, for example, sad, happy, or willing to play or interact, and thus for engagement in inferential practice. If young children or nonhuman animals are capable of engaging in such social explorative practice, they are able to do everything they need to be able to do, in principle, to be taken to know other minds by those who, like Jones (Sellars, 1956) and his followers, are capable of saying that that is what they are doing.

To close the circle, the next section situates the above reasoning in the context of the TT–DPT opposition.

Conclusion: TT–DISC–DPT

Where in the TT–DPT debate is this concept of inference and this version of inferentialism at home? On neither side, yet on both. This inferentialism can coherently subsume both in a direct inferentialist approach to social cognition. In giving that answer, I will respond to opposition from both TT and DPT. That will give occasion to further emphasize that inferentialism can be noncognitivist, nonindividualist, and noninternalist.

At the core of the TT–DPT opposition, we found the concept inference. The question was whether social cognition is indirect and inferential or direct and noninferential.

According to the distinctions and reasoning pursued here, social cognition can be direct and inferential. If so, arguments on behalf of DPT that social cognition is direct don’t show that it is noninferential. Nor do arguments on behalf of TT that social cognition is inferential show that it is indirect.

The conclusion is, therefore, that to ask whether social cognition is inferential isn’t to ask whether it is or isn’t direct. If we take the directness–indirectness dispute to revolve around the concept of “inference,” we’ll never stop spinning.

Taking inferentialism and inference seriously leaves us with three approaches to social cognition. The second subsumes the first and third. (a) TT: social cognition is indirect and inferential (T-concepts, T-objects, I-knowledge); (b) Direct Inferential Social Cognition (DISC): social cognition requires capacities for inferential justification, which may be perceptual (T-concepts, E-objects, D-knowledge); and (c) DPT: social cognition is directly perceptual and noninferential (O-concepts, E-objects, D-knowledge).

DISC¹⁰ doesn’t reside on the side of TT in either of its traditional heavily inferentialist or its predictive coding versions, because DISC rejects both the notion that inferring is an explicit and rule-governed activity and the notion that it is an internal albeit swift and

unconscious brain-bound activity. Nor does DISC reside on the side of DPT, since it claims that social cognition is inferential. DISC thus risks a two-flank opposition. I conclude by addressing these oppositions.

With respect to opposition from DPT, it is true that social cognition, on DISC, cannot be in principle noninferential. Capacities for engagement in inferential practice is what qualifies an instance of perceiving as an instance of knowing. The causal etiology of, for example, feeling sad upon seeing a sad face is, as McDowell (1994, pp. 8, 10) might put it, a mere exculpation of why one feels sad, where, in the dimension of knowing, what is at issue is justification. One must be capable of inferential justification. But exercising that capacity is, on DISC, neither an explicit conscious nor unconscious brain-bound exercise. It's exercised in reliable responsiveness to others, typically in the context of active perception in social engagement, implicitly aimed at finding what others feel and think (see Note 8)—that is, exteroception where the other and the engagement itself is the source of perceptual stimuli. This is what, for example, the theorist can say that one must know how to do to know other minds (cf. Brandom, 2008, pp. 23, 47; Lo Presti, 2016a; Ryle, 1949/2009, pp. 17–18; Wittgenstein, 1953, §201). DISC makes clear that the theorist's capacity to say that direct knowledge of other minds requires inferential capacities is not necessary for the inferential capacities the theorist is speaking about. DISC is committed to the primacy of the know-how implicitly to infer, in the active socially exploratory sense, over the capacities to make those capacities explicit as necessary conditions for knowing other minds. According to DISC, traditional theory-theorists give inference an overintellectualized nonmandatory sense and, on top of that, confuse the use of that concept to speak about social cognition with a capacity necessary for the practice of social cognition. In terms of our previous distinctions, the mistake is, first, to pack the T-concept "inference" with unnecessary intellectualist content and, second, to mistakenly let the content of the concept thus packed sink into the category of E-events that the practice of social cognition is. Both the first equivocation and the second category mistake are sufficiently problematic if taken apart.

With respect to opposition from TT, DISC is inferentialism admitting that causes of capacities for engagement in inferential justification might be exclusively brain-bound. This, though, doesn't commit to inferring that inferring is brain-bound. DISC also rejects that inferentially knowing other minds need be a T-conceptual capacity of accessing other minds, construed as T-objects which, in that double T-sense, are exclusively in the purview of indirect nonperceptual knowledge. Thus, DISC is inferentialism, but an inferentialism to which knowledge of other minds can be directly perceptual.

The main problem with other versions of inferentialism, according to DISC, is a failure to appreciate the pragmatic and social nature of inferring. The inferentialism here pursued is pragmatic and social. It takes inferring to be a social interactive practice that isn't explicit, conscious, logical, or brain-bound (though the causes of capacities for participation in that practice may be). Perceiving is part of that practice, in the sense that perceivings function to produce reasons for further action, which may be given if in demand. But saying that perceiving functions to produce reasons isn't to say that perceivers (or brains) infer in the sense of the theorist who makes explicit what the perceiver must know how to do to know other minds. Perception functions in inferring by producing reasons for further social and exploratory action, including interaction with others

and technologies. Perceivers can explicitly infer, of course, if they're able to deliberate and reflect on other minds like a theorist.

To appropriate the terminology from *Making it Explicit* (Brandom, 1994), saying that knowing other minds involves knowing how to infer, as construed on DISC, is to make explicit capacities implicit in knowing other minds. The fastidious theorist who says that knowing other minds is an inferential capacity in that, or any other, sense should know that the saying is a late-coming capacity dependent on the capacities it is used to make explicit.

DISC, then, subsumes an inferentialist and directly perceptual approach to social cognition. It can handle it because it opts for a social and normative notion of inference, on which, although mental state-concepts are T-concepts applying to E-objects and events (behavior, facial expressions), mastery of such concepts isn't necessary for knowing other minds, although capacities for inferential justification is necessary if in demand. But, importantly, even when such justification is in demand, the inferring isn't an internally secluded (conscious or unconscious) act of manipulating representations, but is itself engagement in social practice of articulating reasons which includes further perception or other exploratory activity.

Finally, some oppositions to inferentialist social cognition haven't been discussed. One is enactivism, on which social interaction constitutes social cognition (e.g., De Jaegher & Di Paolo, 2007; De Jaegher et al., 2010; Fuchs & De Jaegher, 2009; Gallagher & Bower, 2014). Another is phenomenological accounts, on which empathy in face-to-face encounters constitutes (a manner of) social understanding (e.g., Zahavi, 2008, 2011, 2019). These haven't been explicitly addressed. Nevertheless, the clarification of what sense of inference and inferentialism DISC involves, and its divergences from others, is a provisional promissory that the province of inferentialism and inference in the context of social cognition isn't, and shouldn't be thought to be, one from which such approaches are precluded.


I thus applaud Gallagher and Allen's (2018, p. 2643) prognosis that how we understand inference (among other concepts) and, more importantly, its relation to, for example, embodiment, engagement, and affordance, is central for sorting out basic issues, for cognition in general and for social cognition in particular. This article is meant to contribute to that end.

The main conclusion is that the argument of whether social cognition is direct and perceptual isn't an argument of whether it is inferential. Inference doesn't turn that table. Social cognition can be directly perceptual and inferential. To understand that requires some meticulousity about what inference, and inferentialism, can be.

Funding

The author disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: Funding for this research was received by the Swedish Research Council, grant no. 2017-06361.

ORCID iD

Patrizio Lo Presti  <https://orcid.org/0000-0003-1573-6849>

Notes

1. A term suggested by a reviewer.
2. For more on the difference between theoretical and observational concepts, see, for example, Brandom (2010).
3. This example of a color concept abstracts from the discussion of whether color concepts are theory-laden. The point of the example is that some concept application can be noninferential, even if all concept application as such must be justifiable in inferential context. I am grateful to a reviewer for this observation.
4. Strictly speaking, black holes are, even in theory, nonobservables because their gravitational effect is such that they don't emit light. Thus, observation in the case of black-hole astronomy is never observation of black holes themselves but of their gravitational effects. The claim that a black hole has now been "observed" depends, as a reviewer remarked, on millions of data points that needed measurement theories to get them together and produce a so-called picture, which is contested at least in its interpretation. For discussion, see, for example, Hacking (1983, Chapter 16). The example here is meant to illustrate that something predicted by theory to be observable but isn't observed (a T-object) can, with technological development and measurement techniques, be observed (an E-object).
5. Sellars doesn't use the concept affordance. It is nonetheless interesting that he speaks of immediate seeing something as ___ able; of perceiving as related to what "I can" (cf. Gallagher, 2018). This Sellars–Gibson connection is picked up, very briefly, by McDowell in a footnote of *Mind and World* (1994, p. 10). To my knowledge, it has otherwise passed unnoticed (but see Lo Presti, 2016b).
6. For completeness, the intersections left out are the following: All O- (noninferential) concept applications are excluded, among which are O-concept application and D-knowledge (a truism) and T-objects (an impossibility, because T-objects are nonobserveds). This cuts out 8 of 12 results, leaving 4 possibilities. Of these, one is where T- (inferential) concept application intersects T-objects and cannot give D-knowledge. A second is where T- (inferential) concept application intersects I-knowledge, and it goes without saying that it isn't D-knowledge. The remaining two are T-concept application to T-objects (which, again, cannot give D-knowledge), and T-concept application to E-objects, which, if it can give D-knowledge, is the interesting case for the TT–DPT opposition.
7. It isn't a "swift," "unconscious" practice or capacity of individual minds or brains either (Brandom, 2004), as argued by, for example, Carruthers (2011, pp. 201, 221, 238, 2015, pp. 14–15, 18, 237–238). It cannot be, if inferring is a social and normative practice, constituted by the production and consumption of reasons in community (Steiner, 2012, p. 288). If inference is "in" anything, it's in engagement in that practice. It certainly isn't a practice of mind "inferentially secluded from the world," "more skull-bound than embodied and extended" (Hohwy, 2016, p. 259). Supposing that causes of capacities for engagement in inferential practice are exclusively located in the brain, saying that inferential practice is in brains (conscious or not, swift and automatic or not) is as much a stretch as saying that since muscles cause capacities for meaningful discourse, meaningful discourse is in muscles (cf. Ryle, 1949/2009, pp. 26–28; Sellars, 1956, §XX; Steiner, 2014, p. 452).
8. In line with Brandom and arguments by, for example, Gallagher and Allen (2018), an inferential justification can be further (social) engagement; it needn't be a verbal act of saying "___ is a reason for ___." For instance, in the context of social interaction, perceiving another person's behavior can function as reason for taking them to be sad or happy, or for taking them to intend something. One need not know that or be able to say that something is a reason in order to respond to it as a reason. According to Brandom, perceiving as such

isn't inferential, but, to count as knowing what one perceives one must be able to inferentially justify it—which may involve continuous social interaction with the other.

9. Where “implicitly” means knowing how to do it (Brandom, 1994, Chaps. 1, 2). One can attempt to make implicit know-how explicit if one can say that something is a reason for or against something else. To do so, one needs to have available a language with the expressive resources provided by conditionals (such as, e.g., “if the other is happy, then s/he will respond by ___ if I ___”). But this latter verbally explicating capacity is secondary to the capacities for engaging social practices they make explicit (Brandom, 2008). Thus, one may give and ask for reasons, and inferentially justify, without knowing or saying that that is what one is doing. (See also Note 8.)
10. A handy abbreviation suggested by a reviewer.

References

- Amaral, P. V. (1989). *The metaphysics of epistemology: Lectures by Wilfrid Sellars*. Ridgeview.
- Baron Cohen, S. (1995). *Mindblindness: An essay on autism and theory of mind*. MIT Press.
- Brandom, R. (1994). *Making it explicit*. Harvard University Press.
- Brandom, R. (2000). *Articulating reasons*. Harvard University Press.
- Brandom, R. (2002). *Tales of the mighty dead*. Harvard University Press.
- Brandom, R. (2004). From a critique of cognitivism to a conception of objective spirit: Reflections on Descombes' anthropological holism. *Inquiry*, 47(3), 236–253. <https://doi.org/10.1080/00201740410006357>
- Brandom, R. (2008). *Between saying and doing*. Oxford University Press.
- Brandom, R. (2009). *Reason in philosophy*. Harvard University Press.
- Brandom, R. (2010). Conceptual content and discursive practice. *Grazer Philosophische Studien*, 81, 13–35.
- Brandom, R. (2015). *From empiricism to expressivism*. Harvard University Press.
- Carruthers, P. (2011). *The opacity of mind*. Oxford University Press.
- Carruthers, P. (2015). *The centered mind*. Oxford University Press.
- Clark, A. (2016). *Surfing uncertainty*. Oxford University Press.
- Costall, A. (2012). Canonical affordances in context. *Avant*, 3(2), 83–93.
- Davidson, A. S., & Fosgerau, C. F. (2015). Grasping the process of implicit mentalization. *Theory & Psychology*, 25(4), 434–454. <https://doi.org/10.1177/0959354315580605>
- De Jaegher, H. (2009). Social understanding through direct perception? Yes, by interacting. *Consciousness and Cognition*, 18(2), 535–542. <https://doi.org/10.1016/j.concog.2008.10.007>
- De Jaegher, H., & Di Paolo, E. A. (2007). Participatory sense-making: An enactive approach to social cognition. *Phenomenology and the Cognitive Sciences*, 6(4), 485–507. <https://doi.org/10.1007/s11097-007-9076-9>
- De Jaegher, H., Di Paolo, E. A., & Gallagher, S. (2010). Can social interaction constitute social cognition? *Trends in Cognitive Science*, 14(10), 441–447. <https://doi.org/10.1016/j.tics.2010.06.009>
- Fuchs, T., & De Jaegher, H. (2009). Enactive intersubjectivity: Participatory sense-making and mutual incorporation. *Phenomenology and the Cognitive Sciences* 8(4), 465–486. <https://doi.org/10.1007/s11097-009-9136-4>
- Gallagher, S. (2004). Situational understanding: A Gurwitschian critique of theory of mind. In L. Embree (Ed.), *Gurwitsch's relevancy for cognitive science* (pp. 25–44). Springer.
- Gallagher, S. (2008a). Direct perception in the intersubjective context. *Consciousness and Cognition* 17(2), 535–543. <https://doi.org/10.1016/j.concog.2008.03.003>
- Gallagher, S. (2008b). Inference or interaction: Social cognition without precursors. *Philosophical Explorations*, 11(3), 163–174. <https://doi.org/10.1080/13869790802239227>

- Gallagher, S. (2011). Interpreting embodied cognition. In W. Tschacher & C. Bergomi (Eds.), *The implications of embodiment: Cognition and communication* (pp. 59–70). Imprint Academic.
- Gallagher, S. (2018). Rethinking nature: Phenomenology and a non-reductionist cognitive science. *Australasian Philosophical Review*, 2(2), 125–137. <https://doi.org/10.1080/24740500.2018.1552074>
- Gallagher, S., & Allen, M. (2018). Active inference, enactivism and the hermeneutics of social cognition. *Synthese*, 195(6), 2627–2648. <https://doi.org/10.1007/s11229-016-1269-8>
- Gallagher, S., & Bower, M. (2014). Making enactivism even more embodied. *Avant*, 5(2), 232–247. <https://doi.org/10.26913/50202014.0109.0011>
- Gallagher, S., & Hutto, D. D. (2008). Primary interaction and narrative practice. In J. Zlatev, T. Racine, C. Sinha, & E. Itkonen (Eds.), *The shared mind: Perspectives on intersubjectivity* (pp. 17–38). John Benjamins.
- Gallagher, S., & Zahavi, D. (2008). *The phenomenological mind*. Routledge.
- Gibson, J. J. (1979). *The ecological approach to visual perception*. Psychology Press.
- Gopnik, A., & Metzloff, A. N. (1997). *Words, thoughts and theories*. MIT Press.
- Gordon, R. M. (2008). Beyond mindreading. *Philosophical Explorations*, 11(3), 219–222. <https://doi.org/10.1080/13869790802239250>
- Hacking, I. (1983). *Representing and intervening*. Cambridge University Press.
- Heft, H. (2013). Environment, cognition, and culture: Reconsidering the cognitive map. *Journal of Environmental Psychology*, 33, 14–25. <https://doi.org/10.1016/j.jenvp.2012.09.002>
- Hipólito, I. (2018). Perception is not always and everywhere inferential. *Australasian Philosophical Review*, 2(2), 184–188. <https://doi.org/10.1080/24740500.2018.1552093>
- Hohwy, J. (2013). *The predictive mind*. Oxford University Press.
- Hohwy, J. (2016). The self-evidencing brain. *Noûs*, 50, 259–285.
- Kiverstein, J. (2015). Empathy and the responsiveness to social affordances. *Consciousness and Cognition*, 36, 532–542. <https://doi.org/10.1016/j.concog.2015.05.002>
- Lo Presti, P. (2013). Social ontology and social cognition. *Abstracta*, 7(1), 5–17.
- Lo Presti, P. (2016a). An ecological approach to normativity. *Adaptive Behavior*, 24, 3–17.
- Lo Presti, P. (2016b). Whose mind? Two interpretations of what it is to directly perceive other minds. *Theory & Psychology* 26(4), 419–437. <https://doi.org/10.1177/0959354316650943>
- McDowell, J. (1994). *Mind and world*. Harvard University Press.
- O’Shea, J. (2011). How to be a Kantian and a naturalist about human knowledge: Sellars’s middle way. *Journal of Philosophical Research*, 36, 327–359. https://doi.org/10.5840/jpr_2011_21
- O’Shea, J. R. (2012). The “theory theory” of mind and the aims of Sellars’ original myth of Jones. *Phenomenology and the Cognitive Sciences*, 11(2), 175–204. <https://doi.org/10.1007/s11097-011-9250-y>
- Rietveld, E. (2012a). Bodily intentionality and social affordances in context. In F. Paglieri (Ed.), *Consciousness in interaction: The role of the natural and social context in shaping consciousness* (pp. 207–226). John Benjamins.
- Rietveld, E. (2012b). Context-switching and responsiveness to real relevance. In J. Kiverstein & M. Wheeler (Eds.), *Heidegger and cognitive science* (pp. 105–135). Palgrave Macmillan.
- Rietveld, E., & Kiverstein, J. (2014). A rich landscape of affordances. *Ecological Psychology*, 26(4), 325–352. <https://doi.org/10.1080/10407413.2014.958035>
- Ryle, G. (2009). *The concept of mind* (J. Tanney, Ed.). Routledge. (Original work published 1949)
- Schmid, H. B. (2018). The subject of “we intend.” *Phenomenology and the Cognitive Sciences*, 17(2), 231–243. <https://doi.org/10.1007/s11097-017-9501-7>
- Searle, J. (2010). *Making the social world*. Oxford University Press.
- Searle, J. R. (2015). Status functions and institutional facts. Reply to Hindriks and Guala. *Journal of Institutional Economics*, 11(3), 507–514. <https://doi.org/10.1017/S1744137414000629>

- Sellars, W. (1956). Empiricism and the philosophy of mind. In H. Feigl & M. Scriven (Eds.), *Minnesota studies in the philosophy of science* (Vol. 1, pp. 253–329). University of Minnesota Press.
- Sellars, W. (1979). More on givenness and explanatory coherence. In G. Pappas (Ed.), *Justification and knowledge* (pp. 169–182). D. Reidel.
- Sellars, W. (1981). Mental events. *Philosophical Studies*, 39(4), 325–345. <https://doi.org/10.1007/BF00360342>
- Steiner, P. (2012). Boundless thought: The case of conceptual mental episodes. *Manuscrito*, 35, 269–309.
- Steiner, P. (2014). The delocalized mind: Judgement, vehicles, and persons. *Phenomenology and the Cognitive Sciences*, 13(3), 437–460. <https://doi.org/10.1007/s11097-013-9309-z>
- Steinle, F. (2002). Experiments in history and philosophy of science. *Perspectives on Science*, 10(4), 408–432. <https://doi.org/10.1162/106361402322288048>
- Tanaka, S. (2015). Intercorporeality as a theory of social cognition. *Theory & Psychology* 25(4), 455–472. <https://doi.org/10.1177/0959354315583035>
- Wittgenstein, L. (1953). *Philosophical explorations*. Blackwell.
- Zahavi, D. (2008). Simulation, projection and empathy. *Consciousness and Cognition*, 17(2), 514–522. <https://doi.org/10.1016/j.concog.2008.03.010>
- Zahavi, D. (2011). Empathy and direct social perception: A phenomenological proposal. *The Review of Philosophy and Psychology*, 2, 541–558. <https://doi.org/10.1007/s13164-011-0070-3>
- Zahavi, D. (2019). Second-person engagement, self-alienation, and group-identification. *Topoi*, 38, 251–260.

Author biography

Patrizio Lo Presti is a postdoctoral researcher in the department of philosophy, Lund University, Sweden, and in the department of history, logic, and the philosophy of science, UNED, Madrid. He was awarded a PhD in 2016, with the dissertation, *Norms in Social Interaction: Semantic, Epistemic, and Dynamic* (Lund University Publications, 2015). Currently, Lo Presti's research focuses on normativity, intersubjectivity, and individuality in philosophy of mind and philosophy of the social sciences. Recent publications include "Persons and Affordances" (*Ecological Psychology*), and "Whose Mind? Two Interpretations of What it is to Directly Perceive Other Minds" (*Theory & Psychology*).