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Group Dispositional Belief, Information Possession, and "Epistemic Explosion": A Further Reply to Jesper Kallestrup

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On a non-summative, non-supervenient (NSNS) account of group knowledge, a group may know that *p* without any members knowing or even believing that *p*. Additionally, group knowledge does not supervene on the mental states of the individual members of the group. On our version of the NSNS view (Hiller and Randall 2023a), this is primarily because some of a group's epistemic labor can be performed by non-agential objects or devices, like a notebook or a computer. More positively, on our view, for a group to know that *p* requires the group to be structured in a way to possess information, and to function properly (epistemically) in accord with that structure.

Regarding "Epistemic Explosion"

Our original presentation (Hiller and Randall 2023a) did not discuss the nature of group *belief*. In particular we did not discuss the relationship between occurrent and dispositional beliefs, or how to distinguish cases of groups having *dispositional beliefs* from groups merely being *disposed to believe* propositions. In light of concerns raised by Jesper Kallestrup (2022), we develop a framework of a view of group belief (Hiller and Randall 2023b). There, we avow a functionalist view of knowledge and argue that group beliefs can be instantiated in a number of different ways. What brings the plurality of ways together is the fact that groups that have beliefs do so in virtue of having a structure that allows them to possess information and use it in at least some contexts.

However, Kallestrup's second reply (2023)—brings to light a tension between the conjunction of a functionalist view of the nature of knowledge, our own NSNS view of group knowledge, and commonsensical assumptions about the *limits* of group belief. Let us explain.

Kallestrup (2023) raises concerns about an "epistemic explosion" that would result from allowing a disposition to believe *p* to be all that it takes for one to know that *p* (15). As he points out, most of us as individuals are disposed to believe the information we come across on Wikipedia via our smartphones, but it seems highly counterintuitive to consider these dispositions to believe to be sufficient for *knowledge* of that information (prior to actually consulting Wikipedia). If an account of knowledge cannot draw a clear distinction between dispositional belief and mere dispositions to believe, the account will attribute far too much knowledge to individuals. To use terminology from the literature on the extended mind thesis, this is the problem of *cognitive bloat* (see Giere 2007, among others).

What applies to individuals, it seems to Kallestrup—and to us as well—also applies to groups. Kallestrup poses a thought experiment about a group called the "Wikipedia Society" (hereafter WS), which is designed/structured to "amass as much information from Wikipedia as possible" with the help of non-cognitive devices (2023, 15). By the lights of our NSNS account of group knowledge, the WS *knows* that *p* only if the following two conditions are met:

> (STRUCTURE) The group is structured in such a way as to collate or gather information about *p*, and;

> (FUNCTIONING) The group's structure is in fact functioning properly with respect to *p* (Adapted from our 2023a, 8; see too our 2023b, 39).

In the WS example, STRUCTURE is clearly met, and we grant that FUNCTIONING is met as well. Kallestrup's challenge is the following: If the WS meets these two conditions, and there is no way to differentiate between their having a disposition to believe this information versus their having dispositional belief in this information, it then seems to follow that the WS knows all the information contained in Wikipedia. We give STRUCTURE and FUNCTIONING as necessary (and not sufficient) conditions on knowledge; still, our formal statement of the NSNS account does not give any clue as to what *other* necessary condition on knowledge would not be met by the WS, and thus our NSNS account fails to explain *why* the WS does not have all the knowledge in question. Thus Kallestrup's example raises significant concerns for our view.

Information *Possession*

Indeed, we agree that an account of group knowledge should not have the implication that the WS knows all the information contained by Wikipedia. So let's consider what might be driving our intuitions that it is wrong to attribute this knowledge to the WS.

In our (2023b), we write that for a group to have knowledge, the group "must in some way possess information and have it available for use" (2023b, 44). Although the letter of STRUCTURE and FUNCTIONING says that groups merely need to be structured, and to function in such a way as to gather and collate information, the spirit of our view is that something more general—that information *possession* is required for group knowledge.

So what is it for a group to *possess* information, as opposed to merely being able to gather it? We don't have a fully-worked out account, but an analogy with individual knowledge again will be helpful. Setting aside considerations of the *extended mind thesis* (as in Clark and Chalmers 1998, which we will discuss below), it seems to us that a smartphone is *external* to one's person. While individuals are *disposed to believe p* whenever *p* is accessed and evidentially supported by Wikipedia via their device, individuals do not *dispositionally believe p*, because this would saddle individuals with an untenably large amount of knowledge. On our view (2023b, following Peels 2016), dispositional belief comes in two forms: *dormant*, which is information that an entity has possesses but is not occurrently considering, or *tacit*, which is information that easily follows from what the individual believes. Because neither of these conditions is met for the individual with the smartphone, the individual should not be said to believe material that the smartphone can access but has not in fact accessed.

Now, let's assume that the WS's devices are capable of accessing any piece of information contained on Wikipedia's servers. It seems to us that this information is also *external* to the group, in a way analogous to how the information in Wikipedia is external to individuals who are capable of accessing it. The group has not, in the past, stored the particular information, and it does not easily follow from what the group already believes. Thus, our account of knowledge, when supplemented with our (2023b) account of dispositional belief, can show that the WS does not know the information.

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What if, rather than constantly depending upon an internet connection to access Wikipedia, a similar society (we'll call it the *Wikipedia Download Society,* or WDS), downloaded the entire contents of Wikipedia onto a mainframe in their society's headquarters, and printed it out? Kallestrup considers this modification, yet he maintains that "while the [WDS] is disposed to believe all those propositions, it doesn't know them" (2023, 16).

Here, we disagree. In the case of an *individual* who (somehow) has perfect recall of an entire encyclopedia, but does not normally think about this information consciously, it still seems—at least to us—that the individual possesses the information in a way sufficient for belief. And so, analogously, we think that it is appropriate to hold that the WDS *does* believe everything contained within its own internal computers' memories and printouts. It has fulfilled the requirements for dormant group belief, since by downloading the information, it possesses it (as long as the group has a structure to access and deploy this information in at least some situations). So our claim is that judgments about what is *internal* to an individual/group should be part of any account of knowledge, since that is part of the distinction between having a dispositional belief and merely being disposed to believe.

In light of Kallestrup's concerns, we need to revise the formal statement of our NSNS view of group knowledge, to bring it into harmony with our view of dispositional beliefs. So here is a third necessary condition on group knowledge:

> (POSSESSION) For a group to know that *p*, the group must either be such that it (a) *possesses p*, in the sense that *p* is stored within the group's archives, devices, or in the memory of its members, in such a way that it is accessible for use (in at least some situations); or (b) *p* follows (in a way that is easily apparent to the group) from information that the group possesses (as in (a)).

How can one draw a line between information that is internal to a group, and thus possessed by it, versus what is external to a group? We do seem to have some commonsense intuitions about this question, and there is an asymmetry between what is internal to a group and what is internal to an individual. For instance, if the WDS—in a literal legal sense—owns their mainframe, or at least unofficially holds it within their premises, then the mainframe is internal to the group. When an *individual* owns a smartphone and houses it in their pocket, this doesn't make the smartphone "internal" to that person. This is in part because devices can play important roles in group epistemic functioning, but individual knowledge does not extend into individuals' devices. So while the letter of STRUCTURE does not distinguish between what is internal and external to a group, we believe that it is in the spirit of our account to make such a distinction, in accord with our more informal claim that groups must *possess* information.

And while we ourselves don't have a settled metaphysical account of groups, Kit Fine (2020) argues that a group's physical possessions are *literal* parts of groups. Katherine Ritchie (2013, 2020) doesn't go this far, but it still seems in accord with the spirit of her view that some devices are internal to the way a group is structured, even if the only literal parts of groups are their human members. We won't here argue for one or the other, but either would suffice for our purposes.

A Further Problem for Function-Based NSNS Views, and Some Solutions

The addition of POSSESSION may seem, at first glance, to be all that is needed to adequately respond to Kallestrup's (2023) concern. Alas, matters are not so simple. As noted above, we endorse functionalism about cognitive states (see 2023b, 44). For a group (or anything) to know that *p*, it must perform the knowledge function(s). (We don't delve into the details of what these functions are, but they relate to an ability to use information in relevant circumstances.)

Functionalism about knowledge causes problems for our simple response to Kallestrup's concern. That's because at least some groups that reliably access the content of Wikipedia using the internet seem to function, epistemically, equivalently (in virtually all relevant ways) to those that possess the information on their mainframes. So even if common sense supports a distinction between what is internal and what is external to a group, why should information *possession* be a necessary condition on knowledge?

We think that this is a serious objection to the set of views we've argued for. Specifically, a functionalist account of knowledge is in tension with POSSESSION. Here are four potential avenues to respond to this concern.

First, we might bite the bullet and accept that the (original) WS knows everything on Wikipedia that it can reliably access, even if it must use an internet connection to do so. This is analogous to an "extended mind" view (as in Clark and Chalmers 1998), which is also based on a broad functionalist view (and not just of knowledge, but of all sorts of cognitive/mental states). Now, this may face a "cognitive bloat" objection (Ludwig 2014) similar to Kallestrup's (2023b) worry, but Andy Clark bites the bullet on bloat (2008, 80), and perhaps we could as well. For reasons to be discussed below, this is not our favored response, since we deny that individuals, and groups, have extended minds.

Second, we might abandon functionalism about group knowledge. Instead, we could claim that to know that *p* just requires an individual or group to meet certain conditions - justification, belief, truth, and an anti-Gettier condition. How an entity fulfills these other conditions may be multiply instantiated, but this does not entail a functionalist account of knowledge as a whole, given that whatever way they are instantiated, it matters that the information possessed must be internal to the group (as in POSSESSION). Or, perhaps knowledge itself is "first" (see Williamson 2000), and is not reducible to components. We could then argue that group knowledge is likewise irreducible (as in Faria 2022), and at the same time not describable on functionalist grounds. Even though the Wikipedia Society can reliably access information on an outside server, they do not possess this as group knowledge because they do not literally possess the information in ways that suffice for knowledge, even if they can act in ways identical to those who do possess the information. While rejecting functionalism is not our initial inclination, if none of the options discussed below are viable, we might be led to do so.

Third, we might claim that while the main thrust of our view is functionalist, a POSSESSION condition is nevertheless needed as an add-on condition. This is just because without POSSESSION, our view would run afoul of commonsense intuitions, and so

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POSSESSION is needed. We don't endorse this route, since it is *ad hoc*, and also because it puts too much weight on ordinary intuitions.

Fourth, we might give a larger theoretical account of group knowledge that is consistent with functionalism but gives principled reasons for including a possession condition on knowledge. Even though the WS and WDS *seem* to function similarly, they in fact do not.

This fourth route will require a more elaborate discussion, and we dedicate the remainder of this article to it.

The Extended Mind Thesis

One of the primary examples given to motivate the extended mind thesis is of an individual, Otto, who has Alzheimer's disease, but uses a notebook as a memory aid in order to make his way to a museum (Clark and Chalmers 1998).

Part of the motivation for the extended mind thesis is a functionalist view of mind, combined with the claim that an individual can cognitively function similarly whether or not the material basis of their functioning is inside or outside their head. Clark famously proposes (Clark 2008, 79; see too Clark 2010) "glue and trust conditions" conditions, which he claims must be fulfilled in order for non-cognitive elements to become part of an individual's extended mind:

> 1) This resource must be consistently used;
>
> 2) There must be ready accessibility to both the resource and the information it contains;
>
> 3) Any information accessed from it is automatically endorsed.[1]

Because Otto meets these requirements in regard to his notebook, and thus functions similarly to someone who has merely remembered the information about the museum's location, the notebook should count as being a literal part of Otto's (extended) mind. And thus Otto himself *does* know the way to the museum.

Let's grant that analogous conditions are fulfilled in the case of Kallestrup's WS: they do have ready access to Wikipedia, and consistently consult this resource, via a highly dependable internet connection on their devices, and would endorse any information so accessed automatically when they see it. It seems, thus, that the WS would be a case of an *extended group mind* (if we accept the functionalism about knowledge that is an aspect of Clark's view, and which we also have endorsed). Then it seems that the WS indeed will have

[1] There is a fourth condition proposed, where the information collated by or stored in the non-cognitive device must be *priorly endorsed*, but Clark himself has distanced himself from this condition (2008, 96). N.B. Isaac Record and Boaz Miller (2018, 119) argue that prior endorsement is necessary to avoid bloat, and Keith Raymond Harris echoes this sentiment (2020, 237).

an "epistemic explosion" of knowing a great deal of information that it doesn't seem (commonsensically) to know, as in concerns raised in light of Kallestrup's (2023) argument (in analogy to the "cognitive bloat" objection to the extended mind).

Extended Minds As Group Cognition

However, we believe that there is a *better* analysis of the Otto example than that given by Clark (2008) and Clark and Chalmers (1998). Consider the following three cases:

> **Case 1.** Otto, who has Alzheimer's, looks up the address of MOMA on a computer, and writes it in his notebook. With the help of his notebook, Otto walks there (as in Clark and Chalmers 1998).
>
> **Case 2.** DeAndre and Jenny are tourists traveling together in New York City. DeAndre looks up the address of MOMA on a computer and says it out loud to Jenny, who writes it in a notebook. Using the notebook, they walk there, together.
>
> **Case 3.** Yoshi, a tourist, looks up the address of the Museum of Modern Art (MOMA) on a computer. Using his memory to keep the address in mind, Yoshi walks there.

Which pair is more similar in its epistemically-relevant features—Case 1 and Case 2 on the one hand, or Case 1 and Case 3 on the other? We submit that Case 1—the "Otto" case—is much more like Case 2 than it is like Case 3. The difference of just an additional person in Case 2 (in relation to Case 1) seems to have little epistemic relevance to the structure involved in the possession of information. Further, Case 2 clearly fits our view of group knowledge. Whether or not DeAndre and Jenny keep the information in mind, they have access to the information that Jenny has written in the notebook, and so the two of them together with the notebook, as a group, know that information.

Thus Case 1, which is taken to be *the* prototypical case of an "extended mind", is best characterized not as a case of Otto's extended mind, but instead as a case of *group knowledge*—albeit a small, unusual, limit-case of a one-person group.[2] We take it that Otto, as an individual, doesn't know the address when he is not looking at the notebook, but the one-person group of Otto along with his notebook does. Our main claim is that it is a mistake to use the Otto example as illustrative of an extended mind. Such so-called extended minds have really been cases of group cognition all along.

We cannot give a full defense of this argument here, but we should note that we are not the first to make this *kind* of argument. For example, Keith Raymond Harris (2020) argues that extended minds are in fact "cognitive systems" (240; also cf. Miyazono 2017 for a similar argument). His (2020) is titled "Group Minds as Extended Minds", but we believe that Harris gets the direction of explanation *backwards*. While Harris takes extended minds as explanatorily prior to group cognition, we take it that accounts of group belief and group

[2] Horden and López de Sa (2020) argue that there are no one-person groups. We believe that there *are*, but because of lack of space, we are unable to respond to their argument here.

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knowledge are explanatorily prior to discussions of extended minds. We find the notion of an extended mind somewhat metaphysically mysterious, and thus don't wish to base our account of a group mind as a special case of an extended mind. By the lights of our NSNS account, Otto and his notebook (as a one-person group), as well as DeAndre and Jenny and their notebook, are groups with knowledge. The notion of an extended mind has no explanatory role left to play. So rather than calling group minds "extended minds", we believe we should forgo the notion of an extended mind entirely and just call such cases ones of group cognition.[3] And therefore we should forgo the idea that Otto *as an individual* knows the location of the museum. However, the *groups* noted in both in Case 2, with DeAndre and Jenny consulting their computer and notebook, and in Case 3, where Otto partakes in group cognition with the aid of his notebook, do know that information.

This kind of account is not susceptible to a cognitive bloat objection. In cases where an individual meets Clark's glue and trust conditions (above) for an extended mind in regard to their access of Wikipedia, we can say that while the individual does not *possess* information that they are able to access using their device, and thus does not know it, the *group* consisting of Wikipedia content-providers, editors, and end-users does possess the information and thus does know it. But it would not be counterintuitive to claim that *that* group, taken together along with their relevant computers, does possess all the knowledge of Wikipedia.

One might ask: is that large collection of people and computers really a group? On our account, it indeed is a loosely structured group, since it has an implicit structure wherein content providers provide content and know that end-users will access and use that information. (Compare this set of people to the scientific community, as in Bird (2010, 42-3) and Hiller and Randall (2023a 10-11).)

So, to respond to the worry raised in the previous section, while the original WS is able to access the internet, but does not literally, internally, possess the information, the WS does not know that information. *However*, a larger group of which the WS is part does know that information. Thus we believe that there are *principled* reasons to limit the bounds of group knowledge (as well as individual knowledge) to what is internal to the group (or individual).

Here is a way to characterize the situation. Even though WS and WDS *seem* to function the same, they do not. That's because WS's functioning partly consists in the very fact that it plays a role within a larger group, and should be described that way. WDS is not part of a larger group, and thus its functioning is different, even though, narrowly described, it *acts* very similarly.

An analogy: animals typically get energy from what they eat, whereas plants typically get energy through photosynthesis. Do they thus have the same *function* in that regard? It seems that, in the context of the whole organism, the animal is rightly described as *eating*. And in the context of the whole organism, the plant is said to *photosynthesize*. At the most appropriate

[3] We should note that the Otto case is not the only example given to support the notion of an extended mind. Our argument here only suggests that there are no Otto-style extended minds, but does not prove that there are no other kinds of extended minds (such as Feynman and his pencil).

level of explanatory generality, we take it that although plants and animals both acquire energy, they do not function the same. Given the larger context of the whole organisms in question, these should be seen as distinct functions.

Likewise, even though, when viewed narrowly, the WS and the WDS seem to function the same with regard to the use of information, they do not have the same function, because determination of function, at the most appropriate level of generality, should be made in the larger contexts of groups and their surroundings.

We recognize that there are large issues here, and we don't have the space to do them full justice. So we don't take ourselves as thereby giving a full defense of this fourth way of responding to the underlying concern raised by Kallestrup (2023b). Admittedly, this fourth way may be an unstable foundation for the larger edifice of a *functionalist* NSNS account of group knowledge. But if our argument here fails, then, as above, we could fall back on a non-functionalist, but still NSNS, account.

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