The Epistemology of Attention

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Introduction

Root, branch, and blossom, attention is intertwined with epistemology. It is essential to our capacity to learn and decisive of the evidence we obtain, it influences the intellectual connections we forge and those we remember, and it is the cognitive tool whereby we enact decisions about inquiry. Moreover, because it is both an epistemic practice and a site of agency, attention is a natural locus for questions about epistemic morality. This article surveys the emerging epistemology of attention, reviewing the existing literature and sketching avenues for future investigation. It also argues for a reorientation of epistemology itself. This argument is the focus of Section 1.

Section 2 briefly reviews philosophical accounts of attention, Section 3 focuses on issues in traditional, individualistic epistemology, and Section 4 turns to social epistemology.

1 Beyond Belief

Epistemology is dominated by belief, credence, and knowledge. These doxastic attitudes and the largely state-based epistemology within which they dwell are the main lines of analysis for new questions, and their centrality is often the measure of whether something counts as "epistemology".[1] They also prompt further lines of inquiry: Focusing on belief draws us toward questions of justification, rationality, warrant, and so on. Likewise for credences. And, these

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[1]Definitive version cross-reference: Friedman chapter.

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attitudes suggest particular standards. Their purpose is to reflect the world
accurately, and we judge them accordingly. Thus, we have built a comfortable,
well-furnished toolkit with which to tinker. So, why should epistemologists
worry about attention? This section illuminates three limitations of the familiar
toolkit: partiality, unease, and isolation.

Partiality. Attention's cognitive centrality gives rise to the partiality limita-
tion. Attention is an indispensable aspect of our capacity to learn (Mitchell and
Le Pelley, 2010), our evidence acquisition (Siegel, 2017, Ch. 9), and our belief
formation (see §3.1). By ignoring attention, we ignore inseparable facets of the
very questions we mean to answer. For example, appropriately updating be-
liefs in response to new evidence is only one step in the belief-forming process,
which itself is only part of our epistemic practice. We also revise, remember,
forget, inquire, ruminate, cogitate, wonder, and so on. These processes, too,
contribute to our overall success as epistemic agents—to our believing truths
and avoiding falsehoods.

And the nature of attention matters to these processes. This is because our
epistemic practices involve a particular sort of epistemic agent (human beings)
and a particular sort of environment (the real world). Both aspects of this
background context are relevant to epistemic normativity: the world produces
far more potential evidence than we are capable of taking up, and attention
serves as the intermediary between those vast inputs and our limited higher
cognitive processes (Watzl, 2017, §1.3). For example, our perceptual system
selects a portion of that potential evidence, which is then further processed
by other attentional faculties at multiple stages (Duncan, 2006). All this *before*
we arrive at the question of what evidence we have and how it ought to be
integrated into our beliefs.

What's more, we can exercise epistemic agency in this process (§3.2). In
particular, we can train or direct our attention in ways that influence each step
along the way, from birders who train themselves to pluck a rare call from
the forest's chitter and noise, to lifeguards who scan tirelessly for distressed
swimmers, to conspiracy theorists who blinker mainstream news. An account
of epistemic normativity that is silent on these attentional practices misses the
forest for a pine cone.

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Even once we acquire and integrate evidence, attention matters to our epistemic success. This is because we are not perfect updaters. Instead, we integrate evidence in a partial and haphazard fashion. Consider the following exchange from the 1957 film *12 Angry Men*, in which twelve white jurors deliberate over the innocence of a young black man accused of murder:

Juror #3: Will you get to the point?

Juror #8: I will. Let's take two pieces of testimony and try to put them together. First, the old man in the apartment downstairs. He says he heard the boy say "I'm going to kill you", and a split second later he heard the body hit the floor. One second later. Right?

Juror #2: That's right.

Juror #8: Second, the woman across the street claimed positively that she looked out of her window and saw the killing through the last two cars of a passing elevated train. Right? The last two cars.

Juror #3: All right, what are you giving us here?

Juror #8: Now, we agreed that an El takes about 10 seconds to pass a given point. Since the woman saw the stabbing through the last two cars we can assume that the body fell to the floor just as the train passed by. Therefore, the El had been roaring by the old man's window for a full ten seconds before the body hit the floor. The old man, according to his own testimony, hearing "I'm going to kill you" and the body falling a split second later, would have heard the boy make this statement while the El was roaring past his nose. It's not possible that he could have heard it.

At the beginning of this passage, all twelve jurors take themselves to have integrated their evidence—so thoroughly, in fact, that they're willing to stake another man's life on it. But, they have done so haphazardly. Juror #8, however, notices an important connection and draws the others' attention to it. This bid for an attentional shift and the others' uptake thereof allows them to actually draw the conclusions implied by their evidence. And this is the crucial point:

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Given their epistemic shortcomings, their attentional choices determine their epistemic success.

Unease. Our limited toolkit makes awkward toil of some topics that are nevertheless squarely epistemic. But, when all you have is a hammer, everything looks like a nail. For example, because beliefs are not directly under our control, talk of epistemic duties and agency is often strained (§3.2).[2] Similar worries arise for doxastic wronging (§3.5). In these cases, the standard epistemic toolkit is missing a necessary component of straightforward analysis: control. Because attention is a clear site of mental agency (Dicey Jennings, 2022), if anything is, expanding that toolkit to include attention offers a way forward.

Isolation. Within psychology, cognitive science, and neuroscience, attention has been the focus of much more empirical research than belief, credence, and knowledge. There is good reason for this: attention—especially visual attention—is more easily monitored than belief. While some experimental methods, such as self-reporting, are available for beliefs, many are not: at the time of writing, there is no sensor array that allows us to detect individuals' beliefs and we cannot use eye-tracking methods to infer knowledge. Insofar as it is valuable for epistemologists to be in touch with empirical literature in adjacent fields, ignoring attention is a missed opportunity.

In sum, given the creatures we are and the world we inhabit, attention is a crucial determinant of our epistemic success. Ignoring attention ignores a broad, essential aspect of our epistemic practice. While I resist the suggestion that epistemology take a fully zetetic turn,[3] attention is fundamental to our epistemic nature, capacities, and agency, and so ought to be a central part of our epistemology.

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[2]This has led some to argue that these are simply not epistemic, and others to argue for more nuanced accounts of control or agency. Definitive version cross-reference: Epistemic Agency chapter.

[3]See (Definitive version cross-reference: Friedman chapter) for an argument to this effect, and (Definitive version cross-reference: Falbo chapter) for a rebuttal.

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2   The Nature of Attention

Attention is a broad phenomenon. There are many axes along which we might distinguish its forms and features:[4]

- Intellectual vs. Perceptual. Perceptual attention concerns sensory input. Intellectual attention is harder to pin down (Fortney, 2019), but generally concerns attention directed toward thoughts or ideas.

- Binary vs. Degreed. Attention, like belief, comes in degrees. An aching tooth might drown out the entire world or dully beat doldrums throughout the day.

- Endogenous vs. Exogenous. This distinction picks out the locus of attentional shifts. Exogenous attention is attention drawn by the environment, by sensations, or similar, while endogenous attention concerns internal guidance.

- Voluntary vs. Involuntary. Voluntary (or top-down) attention is controlled by agents' desires, intentions, etc., while involuntary (or bottom-up) attention is not. As Watzl (2017, Ch. 6) points out, not all endogenously controlled attention is voluntary: mind-wandering appears to be endogenous, involuntary attention.

These distinctions illuminate the diversity of attentive faculties and phenomena. Minimal, involuntary, exogenous perceptual attention (finding yourself brushing away an ant crawling on your leg) is quite different from maximal, voluntary, internal intellectual attention (urgently inquiring into what's attracting all those ants). This diversity has led some, such as Prinz (2011), to worry that there may be no such thing as attention, at least in the unified "folk" sense of the term.[5] Setting eliminativism aside, however, it is worth canvassing views on the nature of attention. For the sake of brevity, I focus on three: selection-for-action, structuring consciousness, and rational-access consciousness. While this article

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[4]This list borrows from Watzl's (2017, p. 26) more extensive enumeration.

[5]See Watzl (2017, Ch. 1, §8) and Watzl (2011*b*) for discussion of eliminativist views of attention and responses to them.

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provides brief summaries, interested readers should follow the references.[6]

Attention as selection-for-action has a long history in cognitive science (Allport (1987); Broadbent (1971)) and offers a unified, functional account of attention. In a series of papers, Wayne Wu (2008; 2011; 2016) describes this function as "the subject's selection of information (input) that guides or otherwise informs his or her response" (Wu, 2011, p. 101).[7] Wu argues that this account is particularly well-positioned to solve what he calls the "Many-Many Problem": There are many inputs to our actions and many possible outputs, and selecting a pathway from input to output is necessary to acting at all. Attention solves this by performing that pathway selection.

Sebastian Watzl, in contrast, develops an account aiming to capture the phenomenological aspects of attention. Watzl describes attending as the mental act of structuring one's stream of consciousness (Watzl, 2011*a*, 2017). So, if you are attending to a beloved pet, they and things related to them will float on the surface of your stream of consciousness, whether that's perceptual inputs (gentle purring) or occurrent thought about them (would they like this toy?). Familiar metaphors for attention—"spotlighting" or "foregrounding"—are organizational in nature, and this understanding of attention is well-captured by Watzl's view.

Both of these views describe attention as a personal-level phenomenon and cohere well with a view on which attention is a species of mental agency.[8] The final account we consider, Smithies (2011), casts attention as a more fundamental process: that which "makes information fully accessible for use in the rational control of thought and action" (p. 248). For Smithies, attention is a form of consciousness—rational-access consciousness—rather than a mental action in and of itself.

There is great diversity among these views,[9] and they have widely varying

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[6]Watzl (2011*a*), Watzl (2017, Part I), and Mole (2021) provide excellent overviews of the scientific literature on attention for a philosophical audience. Watzl (2011*c*) and Wu (2023*b*) provide helpful discussion of the philosophical significance of attention beyond epistemology.

[7]Wu (2023*a*, Ch. 1 & 2) also provides a recent overview of the selection-for-action account.

[8]See also Dicey Jennings (2022).

[9]Not to mention those not treated here, such as the cognitive unity view (Mole, 2011), the competition resolution view (Ruff, 2011), and many more. See Mole (2021).

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implications for the epistemology of attention. As of yet, there is no consensus among epistemologists concerning these views, so a variety of accounts appear in the background (and sometimes the foreground) of epistemologists' work.

3   Attention in Epistemology

With motivation and background in place, we now shift our own attention to epistemology proper. This section surveys points of connection between attention and epistemology, focusing on recent literature. Because this area is relatively new, I begin with an extended treatment of one particular point of connection—closure puzzles—before surveying the rest.

3.1   Closure Puzzles: Self-Deception and the Paradox of Proof

There are several puzzles about the internal lives of epistemic agents that have to do with inferential connections between propositions they believe. Attention provides a helpful angle on puzzles of this sort because it is simultaneously a manifestation of our limits as epistemic agents and our central means of redress. To illustrate this, consider two cases: the possibility of self-deception and the paradox of deductive proof.

The paradox of deductive proof (or, flamboyantly, 'the scandal of deduction' Hintikka (1973)) arises from the alleged epistemic purpose of deductive reasoning. As Dutilh Novaes (2020, §1.1.3) points out, there is a longstanding tension between the nature and purpose of deductive reasoning: the *purpose* of deductive reasoning seems to be informative. Proof is an epistemic activity: we engage in proofs in order to draw conclusions from our premises and secure certainty. That certainty comes from the *nature* of deduction: deductive reasoning is characterized by the relationship of necessity that holds between the truth of the premises and the truth of the conclusion. But, therein lies the tension. If the premises necessitate the conclusion, isn't it already contained in the premises, in some sense? We cannot "go beyond" the premises, so how is deduction epistemically informative?

I think attention sheds light on this question. Even if we were unerring

reasoners, never making a false step, this would not imply that we are complete reasoners. And we are not. Our attentional limitations mean that we are aware of only a fragment of the perceptual information available to us at any time. Consider again the dialogue between the jurors of *12 Angry Men*. In the passage above, all of the jurors have the same evidence. And, Juror #8 gives a deductive argument. Roughly:

> (1) The train takes 10 seconds to pass a particular point.
>
> (2) The murder took place at the end of the 10-second interval during which the train was passing the point at which the murder took place.
>
> (C_1) Therefore, the train was passing nearby when the murder took place.
>
> (3) The train is too loud to hear others' voices clearly when passing nearby.
>
> (C_2) Therefore, it was not possible to hear others' voices clearly when the murder took place.
>
> (C_3) Therefore, the old man did not hear the murder's voice clearly when the murder took place.

Deductive argument is genuinely informative in this case. In fact, it's *this* argument that convinces multiple jurors to change their vote from *guilty* to *not guilty*. By steering the conversation through this line of reasoning, Juror #8 ensures the others neither miss nor ignore this particular connection. Thus, the role of attention in solving the paradox of deductive proof begins with our cognitive limitations, and ends with our attentional epistemic agency. This line of reasoning coheres with Hempel's (1945) psychological resolution of realization, offering both an explanation of the need for realization and a means by which that need is met.

   I think the case of self-deception is similar. The puzzle of self-deception is this: Self-deception seems to be a common phenomenon. Just ask anyone about their New Year's resolutions. Yet, by its very nature, the concept of deception seems to preclude self-deception. If I am to deceive you about the number of apples in my lunch bag, this seems to require that (1) I know the actual number

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of apples and (2) you do not. (1) is necessary because the goal of deception is to get you to believe something false. I can only do that if I know that the claim in question is not true. (2) is important because if you already know that the claim is false, I probably won't be able to convince you otherwise. But, if you and I are the same person, this situation seems quite impossible: How can I convince myself that I have just one apple if I already know that I have two? And yet, it seems that we do. Or, at least that we do something quite similar.

Here, too, our attentional capacities frame both a better understanding of how the puzzle arises and how it might be resolved.[10] The idea that self-deception concerns believing p and convincing oneself to believe $\neg p$ is an over-simplification (perhaps based on the slightly inapt term "self-deception"). Instead, self-deception is often a matter of choosing not to dwell on or not to assess one's evidence concerning a particular proposition. This is clearly the case for New Year's resolutions: Often, we manage to make yet another resolution by avoiding careful consideration of how well they have gone in the past. This is possible because a feature of the attentional limitations discussed above is that we may be aware *that* our evidence bears on a proposition without being certain of exactly *how* it bears on that proposition.

This is obvious in the case of perceptual attention. For example, I'm currently sitting on a couch with a lovely, but somewhat worn herringbone blanket to my right. I know that if I pay too much attention to the blanket, I'll probably come to notice a host of flaws. A stitch out of place, a snag in the yarn, a slight stain from spilling coffee on it last season... Such things are there to be found, I'm reasonably sure. But, I refuse to attend too closely to the details because I know that if I do, I will be unable to wrest my attention from these flaws in the future.

Instead, I'll toss it in the wash at some point and then brace myself for a day of care and repair. But not now. Knowing that such flaws are possibly there has a very different effect on my psychology than knowing exactly what they are and noticing them regularly. Self-deception, I suggest, is much like this. It is the intellectual equivalent of avoiding careful inspection of the blanket. It is the

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[10]Mine is not the first suggestion of this, though others focus on cases in which an agent has and then attempts to lose belief in a proposition p, rather than the avoidant dynamic explained here. See, e.g., Audi (1976), Baier (1996), Hamlyn and Mounce (1971), and Perring (1997).

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state of knowing that attending carefully to the connections between a particular set of propositions might lead my awareness to undesirable entailments that are obscure from my current remove. This state is possible because of attentional limitations and is resolved by directing one's attention.

But, is this really deception? Unlike my attempt to deceive you about the number of apples in my lunch sack, I don't actually *know* the correct answer in these cases. What I know is that I probably won't like the answer. A closer analogy would be if I tried to distract you from thinking about my apples, say by switching conversation topics to the scandal of the day and hoping you get so caught up in the salaciousness that you never remember to get back to whether I have an apple to share.

The internal case works the same way: By focusing my attention on something else, I can not only stop attending to that set of propositions, but also to the very fact that I was purposefully distracting myself in the first place.[11] This is what happens when we throw ourselves into work in the face of grief or go for a hard run to free ourselves from the stresses of the day. Engrossing ourselves in one means we're not thinking about the other, because we cannot attend to both at the same time. Thus, on this account, self-deception is better understood as intellectual sleight of hand, trading one object of attention for another. Proponents of attentional accounts (Audi, 1976; Baier, 1996; Demos, 1960) and their critics (Canfield and Mcnally, 1960; Lynch, 2014) assume that self-deception involves changing one's epistemic state. Instead, self-deception can be understood as avoiding foreseeable changes to one's epistemic state. And this is possible because of the measure of control we have over our intellectual attention.

Gardiner (Unpublished) offers a similar analysis of attentional self-deception, focusing on the case of sexual trauma, especially in the wake of the consciousness-raising #MeToo movement. Gardiner points out that such cases can create a trilemma between emotional exhaustion, violating self-regard, and self-deception, and coins the term "attention magnet" to describe the mechanism whereby such self-deception takes place.

This topic is closely connected with both prudential and epistemic rationality.

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[11]Cf. Wegner's (1989) notion of a "distractor".

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Gardiner's essay explores the prudential rationality of self-deception. But, we might also ask after epistemic rationality, especially as it relates to epistemic closure. Epistemic closure principles encode the idea that knowledge is closed under entailment, so that if you know that *p*, and *p* entails *q*, then you also know that *q*. There is a rich and careful literature about how to formulate closure principles, which attitudes and epistemic states they pertain to, and the extent to which they are a matter of rationality.[12] But, attention has played little role in this literature. Returning to the dialogue from *12 Angry Men,* this is somewhat surprising. Prior to Juror #8's argument, it is rather harsh to condemn the other jurors as *irrational* for failing to believe that the old man's testimony was fabricated. They'd been presented with a great deal of information, after all, and simply missed the connection. After Juror #8's argument, however, the case is quite different: having had their attention directed through the deductive argument, the jurors who remain unconvinced *do* appear irrational. But, their knowledge has not changed. All that has changed is their attentional state.

3.2   Epistemic Agency

Agency is the capacity to act. In the epistemic context, then, we are concerned with epistemic acts. But, what is an epistemic act? We might delineate acts and agency in two different ways:

> **Provenance Delineation.** Act/agency types are determined by how the act in question is generated.

> **Governance Delineation.** Act/agency types are determined by the norms that govern the act in question.

Standard theorizing about the nature of agency often uses provenance delineation. This is because the central case of agency in the literature concerns *intentional* acts–acts originating in one's intentions. And, intentional agency is contrasted with *mental* agency.

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[12]Definitive version cross-reference: Rationality chapter.

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But, if believing is an act, it is a mental act (choosing to believe would be a mental act, at any rate). So, why distinguish between mental agency and epistemic agency? Shifting into discussion of epistemic agency marks a shift in the questions at hand: Discussions of epistemic agency often focus on governance rather than provenance, with acts and agency *governed* by epistemic normativity at the fore. For purposes of this article, I'll take epistemic normativity to be concerned with the formation of accurate attitudes about the world. So, choosing to believe that you remembered to turn the burner off before leaving the house this morning would be a mental act in the provenance sense, but a matter of epistemic agency in the governance sense. Whether you ought, epistemically, to do so depends on whether doing so promotes accurate attitudes about the world.

There has been much discussion of whether agency is a legitimate concept to apply to belief.[13] But, insofar as attending is aptly understood as an epistemic act, it is a less dubious instance of epistemic agency. Within cognitive science, attention is *the* paradigmatic instance of mental agency (Dicey Jennings, 2022). And, it can be governed by epistemic normativity. This is certainly true, for example, for evidentialists. Evidentialists argue that one ought to believe in accord with their evidence. This obligation is generally grounded in the thought that doing so is one's best chance at forming accurate beliefs about the world. But, if one systematically attends only to sources of evidence they antecedently believe will draw them toward preferred beliefs, then believing in accord with one's evidence no longer serves that norm's grounding purpose. So, evidentialists need attention norms. Whether other epistemic theories need similar attention norms remains to be seen.

In keeping with the above, Fairweather and Montemayor (2017) grounds a theory of epistemic agency in attention. Such an account, they argue, allows us to explain the normative properties of particular beliefs in terms of epistemic agents' virtuous dispositions in a way that respects empirical literature on the role of attention in shaping our perceptions, evidence integration, and assertion.

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[13]Definitive version cross-reference: Flowerree chapter.

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3.3 The Nature of Epistemic Normativity

Closely connected with the discussion of epistemic agency is the longstanding debate over the nature of epistemic normativity. Goldman (1980) draws a distinction between two ways of approaching epistemic normativity: the regulative conception, which advises epistemic agents about which beliefs they ought to adopt, and the theoretical conception, which concerns the evaluation of actions against a particular standard. Goldman draws this distinction from Goldman (1978), which offers these categories—regulative and theoretical—as ways of distinguishing the possible functions of *moral* principles.

But, there is a crucial difference between the regulative (or "guiding") conception of moral and epistemic principles: Where the objects of moral principles—generally, overt, intentional acts—are clearly within the remit of our agential capacities, this is not obviously so for the objects of epistemic principles, which are principally epistemic attitudes like belief (see §3.2). Thus, a ready objection to the regulative conception of epistemic normativity is that human reasoners lack the kind of control necessary to regulate their behavior according to any such norms. So, a regulative conception of epistemic normativity is unhelpful at best and misleading at worst.

However, if attention is a site of epistemic agency, this objection loses force. Moreover, it suggests that epistemologists' historical neglect of the epistemic norms governing attention is a serious lacuna. This is because it is these norms (unlike norms governing, say, evidence integration) that we are actually able to use in guiding our epistemic practice.

Nevertheless, one might wonder why some patterns of attention seem subject to epistemic normativity and others (such as mind-wandering and creative thinking) do not.[14] Siegel (2017, p. 160) argues that patterns of attention are subject to epistemic (or moral) normativity when they "inherit an outlook that is itself appraisable by those norms." Such inheritance is evident in Siegel's central case, Out-Group Hiring. In this case, the hiring committee's unjustified prejudicial attitudes give rise to a biased body of evidence through negatively-

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[14]Relevantly, Irving (2016) argues that mind-wandering is best understood as unguided attention.

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biased patterns of attention. As a result, they obtain a body of evidence that warrants the conclusion that the candidate should be dismissed. So, in order to understand what's gone wrong in this case, we must look at the pattern of attention that brought about the body of evidence rather than the body of evidence itself. Because this pattern of attention arises from an unjustified prejudicial attitude, it is subject to epistemic evaluation. Irving (2018) explores this view further, arguing that it clashes with another epistemically significant attention norm that arises from the cognitive science literature: the explore-exploit norm.

Additionally, an epistemology that incorporates attention can address the role of ADHD, autism, and other attention-related differences among epistemic agents. Given that these differences seem to play a role in such agents' epistemic outcomes, epistemic normativity ought not to be naive to them.

3.4   Attention in Virtue Epistemology

Gardiner (2022) argues that the normative aspects of attention are best under-stood as exhibiting the cognitive virtue of proper attunement, which consists in "paying attention to the right things in the right way, at the right time; being sensitive to significant features and ignoring what should be ignored," (p. 49). Many of these features are diachronic in nature, as exemplified by Gardiner's example of Teagen the vegan's mother, Ariana, who pays undue attention to whether her daughter is getting enough iron. Of course, it is reasonable for any parent to worry after their child's nutrition. But, if Ariana focuses on this daily, it eventually comes to seem like a poor habit.

While Teagen no doubt feels oppressed by her mother's constant badgering, the *epistemic* failing here requires careful explication. As Gardiner points out, the propriety of Ariana's attentional habits depends on her epistemic state. Consider the following questions:

1. What is her evidential state? If Ariana has little evidence about the topic, her continued attention might be reasonable.

2. Is her attention epistemically productive? Mere rumination—all heat and no light—is epistemically poor.

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3. Is her attention aimed at the truth? If Ariana's attention aims only at generating reasons to fuss, it may be practically beneficial, but epistemically poor.

Much remains to be said about the nature of virtuous attunement. Bommarito and Ganeri (2023) also take up the virtue theoretic approach, drawing connections between the epistemically rich Buddhist understanding of attention and analytic epistemology's current turn in this direction.

Fairweather and Montemayor (2017) fall under the banner of virtue epistemology, as they use their view of epistemic agency to defend a virtue reliabilist account of epistemic normativity.

3.5   The Ethics of Belief

Currently, the ethics of belief is the most active area of investigation. Topics falling under this banner are diverse: the moral weight of epistemic obligations, the ethics of asking questions, doxastic wronging,[15] and many more. These topics are nettlesome because they involve aspects of not only epistemology and ethics, but also psychology, agency, and philosophy of mind more broadly. Early explorations of attention's role in the ethics of belief suggests that it may be a particularly apt tool for this task.

Beginning with doxastic wronging, Gardiner (2022) and Saint-Croix (2022) argue that attention sheds light on the moral failings that take place in standard cases of doxastic wronging. Notably, both accounts argue that focusing on attention provides a way of accounting for the sense that something is wrong in these cases without committing to the idea that beliefs themselves, absent their effects on individuals' behavior, can wrong.

Recent work by Ella Whiteley (2022; 2023) and Jesse Munton (2021) focuses on the ways that salience can harm.[16] Whiteley (2023) explains the ways that patterns of attention, such as prioritizing another's gender over their work,

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[15]Definitive version cross-reference: Basu chapter.

[16]Salience and attention are not the same thing. Though Munton and Whitely employ somewhat different accounts of salience, they share the understanding that salience concerns attentional accessibility.

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can render that aspect of them salient in a way that is tokenizing, belittling, or otherwise harmful. In particular, Whitely argues, such patterns may "count as a subtle way of disrespecting their personhood," (Whiteley, 2023, p. 515). Munton's narrower analysis focuses on prejudice, arguing that the undue salience of demographic features like race or gender may constitute a minimal conception of prejudice. Both Munton and Whitely take care to distinguish the many routes by which attentional patterns like these may be activated, enacted, or rendered more probable. Thus, there is much work to be done in understanding responsibility for such wrongs.

Attention also bears on epistemic partiality, the idea that friendship and other intimate relationships bear on one's epistemic obligations.[17] The central point of contention in this literature concerns whether there is a normative clash between friendship and epistemology. Brinkerhoff (2022) argues that friendship brings with it attentional obligations, rather than epistemic obligations. Saint-Croix (Unpublished) concurs that the obligations of friendship are best understood as attentional, but argues that they can be epistemic in nature nonetheless.

Additionally, attention is a potential site of epistemic injustice. Smith and Archer (2020), for example, argue that certain deficits of attention constitute a distinctive form of epistemic injustice because they undermine one's epistemic agency. In this way, attentional epistemic injustice is closely connected with Lackey's (2021) conception of agential epistemic injustice. Focusing on epistemic injustice in folk epistemology, Gerken (2022) uses the fact that stereotypes can make certain features overly salient (*cf.* Munton (2021); Whiteley (2022, 2023)) to identify a form of epistemic injustice arising in everyday knowledge ascriptions.

Before moving on, it is also worth noting that there is a growing literature on the ethics of attention itself. Murdoch (1970), for example, is deeply concerned with the role of attention in moral life. Looking at applications, Gardiner (2022) points to the myriad ways attention, such as fantasizing about others, is sometimes thought to be a violation. Watzl (2022) argues that the centrality of attention in our cognitive lives is good reason to place it at the center of our

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[17]Definitive version cross-reference: Flowerree chapter.

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normative theorizing as well.

3.6   Further Connections

There are a number of other connections made within traditional epistemology.

Contextualism: Lewis (1996) offers a contextualist account of knowledge, on which "S knows proposition P iff P holds in every possibility left uneliminated by S's evidence" (p. 551). Lewis finesses the 'possibilities' in question, carefully delineating those we may ignore. The final rule is the Rule of Attention: "a possibility not ignored at all is *ipso facto* not properly ignored," (p. 559). Lewis refers to this as a triviality, but the consequence is important: for contextualists, changing one's attention alone can change what one knows. Given the limitations of our attentional faculties and the connections between attention and what we care about, this is no triviality.

Higher-order evidence: Dutilh Novaes (2023) and Levy (2021) argue that attention (or salience) may provide a kind of higher-order evidence about the object of that attention within one's epistemic community, though they disagree about the probative value of that evidence. Levy suggests that making something salient in a particular epistemic context—directing someone's attention toward it—acts as a kind of implicit recommendation or signifier of importance (p. 139). Dutilh Novaes (2023), however, points out that such evidence is dubious.

Shifting to an individualistic frame, our own patterns of attention might provide higher-order evidence as well. For example, if you sincerely avow trusting your partner but nevertheless observe that you are frequently sneaking a look at your partner's phone, this might be higher-order evidence about the trustworthiness of your introspective faculties.

Inquiry and Evidence-Gathering Norms: Section 1 of this paper argues for the need to move beyond belief, but it is far from the first articulation of this idea. Most notably Jane Friedman's work in the epistemology of inquiry, or *zetetic epistemology*, focuses on the epistemic norms governing practices of inquiry.[18] There is debate over whether such practices are properly understood

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[18]Definitive version cross-reference: Friedman chapter.

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as epistemic rather than practical,[19] but little has been said so far about the relationship between attention and inquiry. One important exception, however, is Steglich-Petersen and Varga (forthcoming), who argue for pluralism concerning the rationality of different "zetetic styles", focusing on styles of inquiry common in people with ADHD. Additionally, Flores and Woodard (forthcoming) argue that there are epistemic norms on evidence-gathering. Such norms similarly straddle the epistemic and the practical, and attention is deeply intertwined with evidence-gathering. As Watzl (2022) notes, there is much more to say here because attention is both a site of epistemic agency and the cognitive foundation of inquiry.

Motivated Ignorance and related epistemic vices: Finally, attention plays a significant role in the explanation, execution, and resolution of epistemic vices. Both epistemic bubbles and echo chambers, for example, may be generated or buttressed through our attentional behaviors (Nguyen, 2020). Similarly, patterns of attention are most certainly among the "epistemic attitudes and habits that contribute to create and maintain bodies of ignorance" picked by Medina's (2012, p. 39) discussion of active ignorance. More generally, because ignorance often involves failures to attend, epistemologies of ignorance,[20] will be illuminated by an epistemic frame that includes attention.

4 Social epistemology

This section briefly surveys recent applications of attention in social epistemology, understood in terms of social learning, group epistemology, and societal-level analysis.

Learning. Joint attention, which occurs when multiple individuals share an object of attention with mutual understanding of that fact, has been suggested as a distinctive aspect of human learning and cognitive development (Eilan et al., 2005; Mitchell and Le Pelley, 2010). Even so, its nature and role in learning may differ across individuals, especially with regards to neurotypicality.

Network Epistemology employs agent-based models to study groups of

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[19]Definitive version cross-reference: Falbo chapter.
[20]Definitive version cross-reference: Epistemology of Ignorance chapter.

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agents in epistemic relationships with one another.[21] These models have been used to explore cases in which agents ignore various aspects of their epistemic contexts, from evidence they possess (Gabriel and O'Connor, 2022), to sources of testimony from particular groups (Wu, 2022), to sources of testimony who have different beliefs (O'Connor and Weatherall, 2017). Insofar as ignoring aspects of one's epistemic context is a matter of attending, these studies shed light on the role of attention in epistemic communities.

Finally, the **social distribution of attention** has been a fruitful avenue for several recent investigations. Gardiner (2022), for example, points out that our epistemic evaluations of group attentional practices may differ from evaluations of the attentional practices of the individuals constituting that group. For example, maldistribution of attention at the individual level may form an apt distribution in the aggregate, with many individuals specializing in particular topics so that the group as a whole has significant coverage. This, it might be argued, describes the structure of academic and scientific research, wherein individual researchers focus on an area of specialization almost to the exclusion of related topics. In this vein as well, much feminist criticism of androcentric scientific practice can be understood as pointing to a maldistribution of attention at the aggregate level, rather than the individual level (Gardiner, 2022, p. 57). Additionally, de Pinedo and Villanueva (2022) argue for an epistemic de-platforming policy whereby one can ignore another agent's bid for attention to some epistemic possibility. Such de-platforming, they argue, can be both epistemically permissible and a form of resistance (p. 123-4).

5   Conclusion

As this survey suggests, turning toward the epistemology of attention will require not only casting existing topics in a new light, but also developing new tools, new theoretical perspectives, and new avenues of inquiry. There is much to be done.[22]

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[21]See Zollman (2013) for an overview of the network epistemology approach.

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