Drifting and Directed Minds

*The Significance of Mind-Wandering for Mental Agency*¹

Zachary C. Irving

After a conference lunch, you shuffle into the afternoon talk. Although the speaker is lively and the topic excites you, your mind will not be still. The thought of sneaking away for coffee gives way to snippets of a conversation you had this morning. You picture a slide from your talk tomorrow then, smiling, remember that your annual camping trip is next weekend. Later that day, you retreat to a cafe, where you deliberately and methodically work through a counter-example to the speaker's paper. You shut out all distractions and construct a chain of objections and replies.

These vignettes illustrate the striking contrast between mind-wander-ing and directed thinking. Your mind wanders during the talk, passively drifting from coffee, to camping, and so on. In contrast, you meticulously direct your thoughts while working through the counter-example. We can learn much about mental action from this contrast between drifting and directed minds. Perhaps the central question in philosophy of action is this: what ingredient(s) of *bodily* action are missing in mere behaviour?² I ask an analogous question about *mental* action: what ingredient(s) of active, goal-directed thinking are missing in mind-wandering? I argue that the missing ingredient is *guidance*.

My contribution is not merely to propose a guidance theory of action—I am certainly not the first to do so³—but also to develop this theory in novel ways. Specifically, my unique starting point motivates unified new accounts of how guidance bears on four central topics about mental action. The first topic is the *causal basis* of mental action. Mind-wandering is a case study that allows us to tease apart two causes of mental action—guidance and motivation—that often track together and are thus easy to conflate. At least for mental action, motivation and guidance involve *different kinds* of causation: probabilistic and regulatory, respectively. Second is the *experiential character* of mental action. Goals are experienced differently during mind-wandering and directed thinking. Yet this is not because goals are the objects of awareness during mental action (they rarely are). Rather, goals are “phenomenological frames” that carve experience into felt distractions (which we are guided away from) and relevant information (which we are guided towards). Third is the *scope* of mental action. I describe a limit-case of mental action that psychologists call “intentional mind-wandering.” This case involves a form of “meta-control,” where one actively cultivates an unguided mode of attention. Put more provocatively, one is actively passive. The final topic is the *reality* of mental action. My guidance-based theory of mental action offers a novel response to skeptics, who argue that mental events are rarely active.⁴

This paper has six parts. § 1 rejects three intuitive accounts of what separates wandering and directed thought. Although I reject these answers, they contain insights that motivate my guidance theory (§ 2). Specifically, the dis-

¹Forthcoming in *The Journal of Philosophy*.

²Ludwig Wittgenstein, “Philosophical Investigations” G.E.M. Anscomb, Ed., (McMillan, 1953): § 621.

³That was Harry Frankfurt, in “The Problem of Action” *American Philosophical Quarterly* xv,2 (1978): 157–162.

⁴Galen Strawson “Mental Ballistics or the Involuntariness of Spontaneity” *Proceedings of the Aristotelian Society* ciii,1 (2003): 227–256.

inction between drifting and directed minds motivates new accounts of how guidance bears on the causal basis (§ 3), experiential character (§ 4), scope (§ 5), and reality (§ 6) of active thinking.

1 The Missing Ingredient

I begin with this question: what ingredient(s) of active, goal-directed, thinking are missing when the mind wanders? Mind-wandering seems paradigmatically passive. Frankfurt likely speaks of mind-wandering when he says that “we are mere passive bystanders” with respect to “thoughts that strike us unexpectedly out of the blue and...thoughts that run willy-nilly through our heads.”⁵ Hobbes *defines* mind-wandering in contrast to forms of goal-directed thinking such as reasoning and planning⁶, as do contemporary philosophers.⁷ Similar sentiments are implied by the term ‘mind-wandering’ itself: “to wander” means “[t]o move hither and thither without fixed course or certain aim” or “to be (in motion) without control or direction.”⁸ To say that someone’s mind is wandering, then, suggests that her thoughts move without aim, control, or direction; in this sense, her thoughts are passive. (I further defend the assumption that mind-wandering is passive elsewhere.⁹ My aim in the remainder of this paper is to see what follows from this assumption, not to argue for it.)

But what ingredient(s) of agency are missing when the mind wanders? This question is particularly interesting because obvious answers—which concern causes, awareness, and akrasia—don’t work. I illustrate these problems by considering three accounts of the passivity of mind-wandering. Yet there is a more general point in the vicinity. Mind-wandering can possess three features that typically characterize mental action: causal motivation, self-awareness, and enkrasia. But even motivated, aware, and enkratic mind-wandering is still passive. So mind-wandering is a hard case that can test theories of mental action.

Let’s start with the Causal Answer. Davidson famously holds that intentional actions—in contrast to mere behaviours—are *causally motivated* by antecedent beliefs and desires/goals.¹⁰ When you work through a counter-example, for example, your goal causes you to think about how to develop the example, how your opponent might respond, and so on. According to the Causal Answer, mind-wandering is passive because it is unmotivated: that is, it lacks the *causal antecedents* of active, goal-directed, thought. When your mind wanders during an afternoon talk, for example, no goal causes your thoughts to meander from coffee, to slides, to camping (Figure 1a). This answer coheres with various

⁵“Identification and Externality” in *The Importance of What We Care About*. (Cambridge University Press 1998): p. 59

⁶*Leviathan* (Yale University Press, 1651): pp. 20–21.

⁷Zachary C. Irving “Mind-Wandering is Unguided Attention” *Philosophical Studies* clxxiii, 2 (2016): 547–571; Zachary C. Irving and Aaron Glasser “Mind-Wandering: A Philosophical Guide” *Philosophy Compass* xv, 1 (2020); Thomas Metzinger “The Myth of Cognitive Agency” *Frontiers in Psychology* iv, Article 931 (2013); Fabian Dorsch “Focused Daydreaming and Mind-Wandering” *Review of Philosophy and Psychology* vi, 4 (2015): 791–813; Chandra Sripada “An Exploration/Exploitation Tradeoff Between Mind Wandering and Task-Directed Thinking” in Kieran Fox & Kalina Christoff, eds., *Oxford Handbook of Spontaneous Thought and Creativity* (OUP, 2018).

⁸Oxford English Dictionary Online (OUP, 2008).

⁹“Mind-Wandering is Unguided Attention”, *op. cit.*

¹⁰“Actions, Reasons, and Causes” *This Journal* lx, 23 (1963): 685–700.

Davidsonian accounts of mental action.¹¹

Yet empirical evidence suggests that mind-wandering is frequently motivated, in Davidson's causal sense. Studies indicate that our minds often wander to personal goals.¹² During a talk, for example, your mind might wander to goals such as getting coffee and preparing your slides. One explanation of these results is that goals causally influence where your mind wanders. In support of this hypothesis, studies by Giolla and colleagues indicate that real goals lead to more task-related mind-wandering than pretend goals.¹³ In one study, subjects were given a goal—to generate arguments about whether university should be free—and made to announce their goal on video. In contrast, subjects in the control condition filmed a similar video where they *pretended* to have the same goal. Subjects with a real goal reported that their minds wandered to the free university argument significantly more than subjects with a pretend goal. Crucially, everyone *thought* about free university in order to record the video, so it's unlikely that the difference between experimental and control conditions is attributable to priming the concept *free university*. Rather, it seems that having a goal causes your mind to wander that goal.

Morsella and colleagues' experiment provides additional evidence about that causal influence.¹⁴ Subjects in the experimental group were led to believe that they would be quizzed on the names of U.S. States. Before this quiz, subjects were instructed to focus on their breath and record their wandering thoughts: "Every time you catch yourself being distracted... jot that thought down... then bring back your attention to the exercise"¹⁵. When subjects believed they were about to be quizzed, 70% of their wandering thoughts were about geography (especially state names). In contrast, subjects in control conditions thought about geography less than 10% of the time.

As in the previous experiment, the difference between experimental and control conditions suggests that having a goal—preparing for a quiz—*causes* one's mind to wander to goal-relevant thoughts. Furthermore, subjects in one control condition were led to believe that they would *count the letters* in U.S. state names. Both the quiz and the letter-counting task were about state names. So why did only the quiz lead to goal-relevant thoughts? Morsella and colleagues' explanation is that subjects (in some sense) believed that forethought would improve their performance on a quiz, but not letter counting.¹⁶ If they are right, having a *goal* and *believing* (in some sense) that thinking is a means to achieve that goal *causes* your mind to wander to goal-relevant information. Mind-wandering can therefore be motivated in precisely the way that Davidsonian versions of the Causal Answer deny: that is, its *causal antecedents* can include the agent's goals and beliefs. (My eventual answer appeals to a kind of causation: Frankfurtian *guidance*.

¹¹ Frederick Adams "Cognitive Trying" in *Contemporary Action Theory Volume 1* (Springer, 1997): pp. 287–314 and John Gibbons "Reason in Action" in Lucy O'Brien and Matthew Soteriou eds. *Mental Actions* (OUP, 2009): pp. 72–94.

¹² Eric Klinger and Miles Cox "Dimensions of Thought Flow in Everyday life" *Imagination, Cognition and Personality* vii, 2 (1987): 105–128. Benjamin Baird and Jonathan Smallwood, and Jonathan Schooler "Back to the Future" *Consciousness and Cognition*, xx, 4 (2011): 1604–1611.

¹³ "Task-Related Spontaneous Thought" *Journal of Applied Research in Memory and Cognition* vi (2017): 93–103.

¹⁴ "The Spontaneous Thoughts of the Night" *Social Cognition* xxviii, 5 (2010): 641–650.

¹⁵ *Ibid.*, p. 644

¹⁶ Additional research is necessary to rule out alternative explanations. For example, an anonymous reviewer at *Journal of Philosophy* noted that *using* state names might prime geography-related thoughts whereas *mentioning* state names might not. One direct way to test Morsella and colleagues' hypothesis is to give subjects tasks that do not vary across the use–mention distinction, but have different requirements for forethought (for example, recalling how to spell state names versus counting the letters in state names). This is an important topic for future research.

But this is an importantly different kind of causation than Davidsonian *motivation*.)

We are now faced with a harder version of our original question: what ingredient(s) of active thinking are missing in *motivated* mind-wandering? Carruthers offers an error-theoretic answer to this question: mind-wandering is active; yet we (mistakenly) believe that it is passive because the goals that causally influence mind-wandering are *sub-personal* and *unconscious* (Figure 1b).¹⁷ Carruthers posits an unconscious and sub-personal mechanism that “decides” where our mind will wander by comparing the relevance of potential thoughts. Carruthers’ view implies that each wandering thought is active in a Davidsonian sense: it is causally motivated by the goal of having relevant thoughts. Yet because this goal is unconscious and sub-personal, we mistakenly assume that wandering “thoughts change direction for no apparent reason” and conclude that “we are passive receivers of our own thoughts, rather than agents who actively produce or control them.”¹⁸ I do not endorse Carruthers’ strong claim that *every* wandering thought results from a motivated decision process (I claim only that *some* mind-wandering is motivated). What matters for present purposes is Carruthers’ general strategy: argue that mind-wandering appears passive only because we are unaware of the goals that motivate our wandering thoughts. Let’s call this the “Awareness Answer”.

The Awareness Answer is limited because our minds frequently wander to goals like taking a quiz, which we are aware of having. Suppose you ask a subject from Morsella’s experiment, “Why did your mind wander to ‘Nebraska’”? She might respond, “Because I’m about to take a quiz on U.S. States.” Here, the subject is aware of two things: a) her goal and b) how this goal motivates her mind-wandering. But even then, mind-wandering still seems passive. The subject might continue, “I understand *why* my mind wandered to ‘Nebraska’. But this doesn’t mean my hand was on the reins. My thoughts weren’t random, but I wasn’t controlling them either.” We are now left with an even harder question: what ingredient(s) of active thinking are missing in *knowingly motivated* mind-wandering?

Watzl considers a final answer, on which mind-wandering is passive because it is *akratic*: we want to think about one thing and our mind wanders elsewhere. Or at least, mind-wandering does not align with our *higher-order desires*.¹⁹ Many cases of mind-wandering are akratic in these ways. For example, you may find your mind wandering to coffee when you sincerely want (or at least want to want) to focus on a talk. Or your mind may wander to ‘Nebraska’ when you sincerely (want to) want to focus on your breath. In these cases, your thoughts are akratic—they conflict with your

¹⁷*The Centered Mind* (OUP, 2015): pp. 166–168. See also, Joshua Shepherd “Why Does the Mind Wander?” *Neuroscience of Consciousness* 1 (2019). Instead of these error theoretic awareness answers, one could argue that mind-wandering is *actually* passive because it lacks *non-observational* self-awareness. How to account for non-observational awareness of mental action is contentious: Christopher Peacocke “Mental Action and Self Awareness” in *Contemporary Debates in the Philosophy of Mind* (2007): pp. 358–376, Matthew Soteriou *The Mind’s Construction* (OUP, 2013): Chapter 10, and Joëlle Proust *The Philosophy of Metacognition* (OUP, 2013). Proust’s model is consonant with my own. She grounds mental action awareness in meta-cognitive *feelings*. One crucial meta-cognitive feeling is present in goal-directed thinking but not mind-wandering: felt distraction. Mind-wandering may therefore support meta-cognitive theories of mental action awareness.

¹⁸*The Mind’s Construction*, *op. cit.*: p.166.

¹⁹*Structuring Mind* (OUP, 2017): p. 134. Frankfurt argues that other motivated mental events (for example, obsessive thinking) are passive because we do not endorse them in “Identification and Externality”, *op. cit.*: p. 59. If I am correct that we can endorse intentional mind-wandering, we can use this case to tease apart Frankfurt’s notions of guidance and endorsement. Intentional mind-wandering may also show that we can *try* to be mentally passive, in contrast to Peacocke “Mental Action and Self-Awareness”, *op. cit.* and Alfred Mele “Mental Action: A Case Study” in *Mental Actions*, *op. cit.*: pp. 17–37. This would complement O’Shaughnessy’s argument that trying is not necessary for mental action in “Trying and Acting” in *Mental Actions*, *op. cit.*: pp. 163–172.

Figure 1: What ingredient of active, goal-directed, thinking is missing during mind-wandering?

(higher-order) desires—and therefore are passive.

Yet this Akrasia Answer is incomplete, since non-akratic mind-wandering is pervasive. Specifically, reports of “intentional mind-wandering”—that is, letting one’s mind wander on purpose—are commonplace in the laboratory, classroom, and everyday life.²⁰ Consider a student who is bored stiff in lecture. She might intentionally let her mind wander rather than focus on her soporific teacher. She may even *want to want* to let her mind wander (the lecture is that dull). Yet even when we let our minds wander on purpose, our thoughts still seem passive. For instance, the bored student might say, “I let my mind wander on purpose, but I wasn’t directing my thoughts. Rather, ideas were drifting passively before my mind.” We can now pose our hardest question yet: what ingredient(s) of active thinking are missing in *knowingly motivated and intentional* mind-wandering?

I will argue that the missing ingredient is *guidance*: mind-wandering is unguided attention. Broadly speaking, two considerations recommend my view. First, I easily account for knowingly motivated and intentional mind-wandering. I do not argue that no other action theory can accommodate these cases (such a broad review of the literature is outside the bounds of this paper). But it is an advantage to easily solve problem cases. Second, my view does explanatory work in the broader landscape of the philosophy of mental action. Specifically, the contrast between mind-wandering and directed thinking motivates new and unified accounts of the causal basis, experiential character, scope, and reality

²⁰For a review, see Paul Selk et al. “Mind-Wandering With and Without Intention” *Trends in Cognitive Sciences* xx,8 (2016): 605–617.

of mental action. Indeed, although I ultimately reject the Causal, Awareness, and Akrasia Answers, my theory captures what each gets deeply right. The Causal Answer is right that mind-wandering is not caused in the right way to be goal-directed. For even causally motivated mind-wandering is not *causally guided*. The Awareness Answer is right that we don't experience goals in the same way during mind-wandering and goal-directed thinking. And the Akrasia Answer is right that we form fundamentally different kinds of intentions during mind-wandering and goal-directed thought.²¹

2 Mind-Wandering as Unguided Attention

I define mind-wandering as unguided attention. This paper's primary contribution is to develop a theory of guidance. But I should briefly say what I mean by "attention". When I say that mind-wandering is a form of attention, I mean that consciousness is focused on thoughts that wander before the mind. This is consonant with a widely accepted view amongst philosophers: attention is a focused mode of consciousness, where focus can be characterized in terms of enhanced vivacity²², increased determinacy²³, rational accessibility²⁴, a primitive structuring relation²⁵, or something else. I am not committed to the *identity* of attention and focused consciousness. Rather, I hold only that focused consciousness is *constitutively sufficient* for attention: that is, every state of focused consciousness is token identical to a state of attention. Readers committed to an incompatible theory of attention may translate my view into more acceptable terms. Such readers can (awkwardly) translate "mind-wandering is unguided attention" into "the mind wanders when and only when the focus of consciousness unfolds without guidance".

So what is attentional *guidance*? In general, guidance concerns how behaviour or thought is monitored and causally regulated *as it unfolds over time*.²⁶ In my specific sense, guidance is a counter-factual notion that concerns how you *would* feel, were your behaviour to deviate from some normative standard. When guided, you would experience errors as "calling for correction."²⁷ Imagine a waiter who is balancing a stack of plates, for example. If the dishes were to start slipping, he would be drawn to correct the situation and rebalance the stack. Reliably following a norm is therefore insufficient for guidance (this will be crucial when we turn to mind-wandering). For example, Railton contrasts guidance with his reliable disposition to leave the kitchen cupboards ajar: "If I find myself in a kitchen with self-closing cabinets, I make no effort to prevail against them."²⁸ Railton is not *guided* to leave the cupboards ajar

²¹ My previous work objects to other views of mind-wandering, which could provide alternative answers about the missing ingredient: Metzinger "The Myth of Cognitive Agency" *op. cit.*, Dorsch "Focused Daydreaming" *op. cit.*, and Carruthers *Centered Mind op. cit.*. A full discussion of these views is outside the bounds of this paper, and I refer the reader to Irving "Mind-Wandering is Unguided Attention", *op. cit.* and Zachary C. Irving and Evan Thompson "The Philosophy of Mind-Wandering" in *Oxford Handbook of Spontaneous Thought and Creativity, op. cit.* for in-depth arguments.

²² Edward Titchener "Attention as Sensory Clearness" *The Journal of Philosophy, Psychology and Scientific Methods* vii,7 (1910): 180–182.

²³ Bence Nanay "Attention and Perceptual Content" *Analysis* lxx,2 (2010): 263–270.

²⁴ Declan Smithies "Attention is Rational-Access Consciousness" in Christopher Mole, Declan Smithies, and Wayne Wu (Eds.) *Attention: Philosophical and Psychological Essays* (OUP, 2011): pp. 247–273.

²⁵ Watzl, *Structuring Mind, op. cit.*

²⁶ Frankfurt "The Problem of Action," *op. cit.*

²⁷ Peter Railton "Practical Competence and Fluent Agency" in David Sobel & Steven Wall Eds. *Reasons for Action* (OUP, 2009): pp. 81–115; cf. Michael Brownstein & Alex Madva "The Normativity of Automaticity" *Mind & Language* xvii,4 (2012): 410–434.

²⁸ Railton "Practical Competence and Fluent Agency", *op. cit.*, p. 9

because he would not experience closed cabinets as calling for correction.

Guidance is the central ingredient in active, goal-directed, attention. Roughly speaking, someone's attention is directed (that is, guided) by a goal only when she would feel pulled back from distractions. More precisely, an agent $\mathcal{A}$'s attention is directed by one of her goals, τ , if and only if $\mathcal{A}$ is guided to focus her attention on information that she takes to be relevant to τ ; that is, $\mathcal{A}$ has two dispositions:

1. $\mathcal{A}$ reliably focuses her attention on information that she takes to be relevant to τ and
2. If $\mathcal{A}$'s attention weren't focused on information that she takes to be relevant to τ , $\mathcal{A}$ would feel distracted and thereby be disposed to correct this fact

Consider the case where you construct a counter-example in a crowded cafe. Here, your attentiveness manifests in two ways. First, you reliably focus on information that is relevant to your counter-example, such as the target view, obvious responses, and so on. Second, if you were momentarily distracted by clinking plates or a stranger's conversation, you would feel distracted and—after a moment of frustration—likely return to the counter-example. That is, you would feel pulled back.

Mind-wandering is *unguided attention*: for any agent $\mathcal{A}$ whose attention is focused on some information, $\mathcal{A}$'s attention is unguided if and only if there is no particular information towards which $\mathcal{A}$'s attention is guided. In particular, she does not satisfy the counter-factual condition for guided attention:

- There is no information ι such that, if $\mathcal{A}$'s attention weren't focused on ι , she would notice, feel discomfited by, and thereby be disposed to correct this fact.

When your mind wanders during a lecture, for example, you might think about coffee one moment and your slides the next. Yet whenever your attention shifts from one topic to another, you feel no discomfort drawing you back. You simply drift on unchecked.

What ingredient of active, goal-directed, thinking is missing when the mind wanders? We now have an answer: guidance. Unlike previous answers, mine is consistent with empirical evidence about motivated, aware, and intentional mind-wandering (§ 1). Our minds reliably wander to goals we are aware of. This is no problem for my view, since reliability and awareness are insufficient for guidance. Goal-relevant and aware mind-wandering is not guided, since we would not feel pulled back if our thoughts drifted elsewhere. We will see in § 5.1 that intentional mind-wandering is also consistent with my view, since people can intentionally initiate and maintain an unguided mode of attention.

From my theory of mind-wandering, I will extract general lessons for the philosophy of mental action. Those lessons capture what is right about the Causal, Awareness, and Akrasia accounts of mind-wandering. First, mind-wandering is not caused in the right way to be goal-directed. Specifically, it is causally motivated but not causally guided (§ 3). Second, goals aren't experienced in the same way during wandering and goal-directed attention. For we

experience goals partly through guidance. Goals are what I call “phenomenological frames,” which carve experience into distractions (which we are guided away from) and relevant information (which we are guided towards) (§ 4). Third, intentional mind-wandering contrasts with intentional goal-directed thought (§ 5.1).

I should address three dialectical points before I turn to mental action. First, psychologists typically define mind-wandering as thought that is unrelated to some task or goal.²⁹ I object to the standard view in previous work.³⁰ I do not rehash those objections here, since my present aim is to explore the implications of my positive view for action theory. Some of those implications may apply to task-unrelated thought, since my empirical work suggests that approximately 60% of task-unrelated thoughts are unguided.³¹

Second, I take no stand on what kind of mental states one can token while mind-wandering. Some argue that mind-wandering is a form of intellectual attention, where one focuses on the contents of non-perceptual states such as imagination, memory, and cognition.³² Others (myself included) argue that mind-wandering can be perceptual, such as when your attention drifts during a forest hike.³³ My present concern is orthogonal to this debate. I am interested in the manner in which wandering and directed streams of attention unfold over time, and take no stand here on whether that attention is intellectual or perceptual.

Third, I have thus far assumed that mind-wandering has necessary and sufficient conditions. But this is contentious, given the family resemblance theory of mind-wandering.³⁴ On this theory, mind-wandering has multiple characteristic features—including unguidedness—but none that are necessary or sufficient. I need not take a stand on the family resemblance theory here for two reasons. First, this paper’s contribution is to trace the action theoretic implications of a central feature of mind-wandering: unguidedness. Family resemblance theorists can accept these implications, since they agree that paradigm cases of mind-wandering are unguided. Second, these theorists encourage researchers to focus on a single feature of mind-wandering, such as unguidedness. They argue that “perhaps [the] most important” implication of the family resemblance framework is to “allow researchers the freedom to study whatever features of mind-wandering they wish.”³⁵ For “conceptual clarity will simply require” that researchers explicitly state how they “conceptualize mind-wandering.”³⁶ I conceptualize mind-wandering as unguided attention.

Fourth, I assume that mind-wandering requires attention (focused consciousness). Elsewhere, I argue for this claim

²⁹For a review, see Jonathan Smallwood & Jonathan Schooler “The Science of Mind Wandering” *Annual Review of Psychology* lxvi (2015): 487–518.

³⁰Irving “Mind-Wandering is Unguided Attention,” *op. cit.*; Irving and Thompson “The Philosophy of Mind-Wandering,” *op. cit.*.

³¹Mills et al. “Is an Off-Task Mind a Freely Moving Mind?”, *op. cit.*; Kam, Irving, et al. “Distinct Electrophysiological Signatures of Task-Unrelated and Dynamic Thoughts” *PNAS* cxviii, 4 (2021)

³²Jonathan Smallwood “Distinguishing How From Why the Mind Wanders” *Psychological Bulletin* cxxxix,3 (2013): 519–535.

³³Kalina Christoff “Undirected Thought” *Brain Research* mcdxxviii (2012): 51–59; Kalina Christoff, Zachary C. Irving, Kieran Fox, Nathan R. Spreng, and Jessica R. Andrews-Hanna “Mind-Wandering as Spontaneous Thought” *Nature Reviews Neuroscience* xvii, 11 (2016): 718–731; Zachary C. Irving, Aaron Glasser, Alison Gopnik, Verity Pinter, and Chandra Sripada “What Does ‘Mind-Wandering’ Mean to the Folk?” *Cognitive Science* xlv,10 (2020); Irving “Mind-Wandering is Unguided Attention” *op. cit.*: 566.

³⁴Paul Seli et al. “Mind-Wandering as a Natural Kind” *Trends in Cognitive Sciences* xxii,6 (2018): 479–490.

³⁵*ibid.* 488.

³⁶*ibid.*

on the basis of mind-wandering’s phenomenology, accessibility, and role in normative evaluations.³⁷ I do not develop those arguments here, since this paper is about mental action rather than attention. Instead, to remain somewhat neutral, I will sketch two modifications to my theory that allow for mind-wandering outside of attention. First, one could say that mind-wandering is unguided *thought*.³⁸ I use “thought” broadly to denote any informational state in the foreground or background of consciousness. Second, one could allow that a goal can guide some thoughts, while others are free to wander. We must introduce new machinery—domains of application—to allow for this possibility. Consider an agent $\mathcal{A}$ whose thoughts are guided by a goal, τ , which has a domain of application $\mathcal{D}$. Formally, $\mathcal{D}$ is the set of information that $\mathcal{A}$ takes to be either a distraction from or relevant to τ . Any thought whose informational content is outside of $\mathcal{D}$ is unguided and free to wander. Informally, $\mathcal{D}$ captures how some goals guide only certain *types* of information.³⁹ While you work on a jigsaw puzzle, for example, $\mathcal{D}$ might include visual but not auditory information. If so, your inner speech could be unguided and count as mind-wandering. We can use this machinery to account for mind-wandering outside of attention. Consider a student whose attention is focused on lecture. Suppose her goal’s domain of application includes only the foreground of consciousness. Her mind might thus wander in the background of consciousness. For the sake of simplicity, I will not incorporate this machinery into the main text. One could modify my theory even more to allow for unconscious mind-wandering (I argue that mind-wandering must be conscious elsewhere, but again, these arguments depend on considerations that are outside the scope of this paper).

3 Causal Basis of Mental Action

So far, I have argued that a guidance theory of mental action explains why mind-wandering is passive. The remainder of this paper uses this starting point to develop new, unified accounts of the causal basis, experiential character, scope, and reality of mental action. Let’s start with the causal basis. Actions have (at least) two types of causes: motivating and guiding causes. Our wandering thoughts are frequently motivated, but never guided. Mind-wandering is therefore a case study that helps us tease apart two causal bases of mental action—motivation and guidance—that often track together and are thus easy to conflate.⁴⁰

³⁷ Zachary C. Irving *The Wandering Mind: A Philosophical Study of Thinking* (Doctoral Dissertation: University of Toronto, 2016): 38–42.

³⁸ Irving and Thompson “The Philosophy of Mind-Wandering,” *op. cit.*.

³⁹ For a similar idea, see Christopher Mole *Attention Is Cognitive Unison* (OUP, 2011): § 4.9.

⁴⁰ In “The Problem of Action,” *op. cit.*, Frankfurt argued that causal theories cannot accommodate guidance. However, that holds only for causal theories that focus exclusively on the *causal antecedents* of action, rather than how action is *causally guided* over time. Frankfurt’s deeper lesson is therefore that guidance is essential for a complete causal theory of action. See David Velleman “The Way of the Wanton” in K. Atkins & C. MacKenzie Eds. *Practical Identity and Narrative Agency* (Routledge, 2008): p. 189, Kieran Setiya *Reasons Without Rationalism* (Princeton University Press, 2007): pp. 31–32, and Elizabeth Pacherie “The Phenomenology of Action” *Cognition* cvii,1 (2008): 179–217. Mind-wandering can advance philosophical discussions of guidance in three ways. First, mind-wandering helps us distinguish the causal role of motivation and guidance in (mental) action. Second, motivated mind-wandering shows us that minimal forms of agency can exist without guidance. In contrast, Setiya argues that deviant causal chains are passive because they result from motivation without guidance: *Reasons Without Rationalism*, *op. cit.*, pp. 31–32. Third, mind-wandering contrasts with other cases that are “neither actions nor mere happenings” (Frankfurt, “Identification and Externality,” *op. cit.*, 58). Such cases include drumming one’s fingers on a table (*ibid.*, p. 58), fluidly driving a car (Railton, “Practical Competence” *op. cit.*), or expertly swinging a baseball bat (Michael Brownstein “Rationalizing Flow” *Philosophical Studies* clviii,2 (2014): 545–568). Philosophers have argued that these cases are not fully active because they are *mindless*—the agent cannot tell you *what* she is doing or *why*—yet not fully passive because they are *guided*. Motivated mind-wandering falls between action and passivity for the opposite reason. It is *not mindless* (§ 1): the agent

Whether behaviour is motivated depends on its causal antecedents: motivated behaviour is caused by the agent's beliefs and desires.⁴¹ What matters for our purposes is how goals motivate *attention*. Motivating goals are probabilistic and rationalizing causes of attention. Goals are probabilistic causes of attention, insofar as pursuing a goal *increases the likelihood* that you will attend to goal-relevant information. Goals are rationalizing causes of attention, insofar as a goal's causal impact on attention is sensitive to its *rational profile* (for example, beliefs about whether thinking is a means to achieve their goal).

Consider a case of motivated mind-wandering (Figure 2a). Suppose you're trying to ace a geography quiz (call this goal " G_m "). Empirical evidence suggests that G_m would increase the likelihood that your mind wanders to geography (§ 1) and therefore be a probabilistic cause of attention. Empirical evidence also suggests that G_m 's causal impact would be sensitive to your belief that thinking helps to prepare for quizzes. This is why people's minds frequently wander to quizzes, but not letter-counting tasks. G_m 's causal impact on attention is therefore sensitive to a core part of G_m 's rational profile: how it integrates with your beliefs to produce behaviour and thought. Your wandering attention is therefore motivated.

Guidance requires more than motivation. Guiding goals are not only probabilistic and rationalizing causes of attention, but also *regulatory causes* (Figure 2b). Goals are regulatory causes of attention insofar as they satisfy the counter-factual condition for guided attention: you would feel pulled back, were you distracted. Suppose you're constructing a counter-example in a busy cafe (call this goal G_g). Just like G_m , G_g increases the likelihood that you'll attend to goal-relevant information: objections, responses, and so on. Furthermore, G_g 's causal impact on attention is sensitive to G_g 's rational profile, including your beliefs about which objections and responses are germane. Like G_m , G_g is therefore a probabilistic, rationalizing, cause of attention.⁴² But unlike G_m , G_g also regulates your attention, since you would feel pulled back from distractions in the cafe. Such causal regulation is distinctive of guidance and essential to the causal basis of goal-directed attention.

One way to draw out the causal contribution of guidance is to consider how it eliminates *luck*. Suppose you're trying to pop a balloon and can use a bullet or guided missile. Seventy percent of the time, you hit your target in a straight shot. Yet you initially miss thirty percent of the time, perhaps because the bullet floats aside or your hand trembles. A bullet would then rush past, whereas a guided missile would detect the error, correct its trajectory, and destroy the target. The crucial point is this: you're (somewhat) lucky if the bullet doesn't miss. Luck isn't required for the guided missile. For even if you initially miss, the missile will succeed.

Similarly, guided attention eliminates luck that is present in mind-wandering. When your mind wanders to a quiz, for example, it's lucky when your thoughts stay on topic rather than drift onwards. In contrast, it's not lucky when

can tell you *what* she is doing and why (for example, thinking about a quiz to prepare). Yet mind-wandering is *unguided* (§ 2).

⁴¹ Davidson "Actions, Reasons, Causes," *op. cit.*

⁴² Guidance by a goal requires the sufficient conditions for motivation: probabilistic, rationalizing, causation. Goal-directed attention is therefore *both* guided and motivated. Whether motivation is necessary for guidance rests on whether we can be guided by non-rationalizing states such as affective salience. For a discussion, see Watzl, *Structuring Mind*, *op. cit.* and Irving "Mind-wandering as Unguided Attention," *op. cit.*

(a) Motivated mind-wandering: one's goal is a probabilistic, rationalizing, cause of attention. That is, one's goal increases the likelihood that one will attend to goal-relevant information (probabilistic) in a way that's sensitive to the goal's rational profile (rationalizing).

(b) Goal-directed (guided) attention: one's goal is a probabilistic, regulatory, and rationalizing cause of attention. That is, one's goal increases the likelihood that one will attend to goal-relevant information (probabilistic), ensures that attention is pulled back when distracted (regulatory), and does so in a way that's sensitive to the goal's rational profile (rationalizing).

Figure 2: Motivation (a) Versus Guidance (b)

goal-directed attention remains on task. For if you were distracted, you would be drawn back. Such luck-reducing regulation is essential to the causal profile of goal-directed attention. Probabilistic motivation and regulatory guidance are woven together in standard cases of goal-directed attention. Yet with the aid of mind-wandering, we can pull these strands of agential causation apart.⁴³

4 Guidance and the Experience of Mental Agency

Contra the Awareness Answer, we are sometimes aware of goals that motivate mind-wandering (§ 1). Yet there is something true in the vicinity: goals aren't *experienced* in the same way during mind-wandering and goal-directed thinking. Using this distinction, we can gain traction on a deep question: what does it mean to experience a goal? During goal-directed attention, I argue that goals are *phenomenological frames*, which carve experience into felt distractions and relevant information (§ 4.1). This framing occurs through guidance. In contrast, experience is unframed

⁴³Shepherd recently objected that my view cannot explain why our minds often wander to goals, if mind-wandering is unguided: (2019) "Why Does The Mind Wander", *op. cit.*. This section provides a rigorous answer: because mind-wandering is motivated, not guided.

during mind-wandering: we do not feel distracted when our thoughts drift between topics; we simply move on. My account has the surprising, but well-supported, implication that felt distraction is central to the experience of goal-directed attention (§ 4.2).

4.1 Phenomenological Frames

How are goals experienced during goal-directed attention and mind-wandering? More fundamentally, what does it mean to *experience* a goal? I reject one potential answer: goals are *objects of awareness*. This is true sometimes, but not always. I will argue that in all cases of goal-directed attention—and no cases of mind-wandering—goals are *phenomenological frames*.

Goals are sometimes objects of conscious awareness. For example, a novice driver might periodically call her goals to mind, “Check your mirrors! Stay in the lane! Check your blind spot before turning!” Or someone might focus on the goal *make dinner plans with Suzie* when he schedules his upcoming week. However, agents also frequently pursue goals without representing them explicitly. Alan White’s analysis of attentive fishing illustrates this point. Attentive, skilled fishers don’t explicitly call their goals to mind. They don’t think, “Keep fishing! Check for bites! Reel the bait in slow!” A novice might explicitly represent these goals, as might someone writing an instruction manual about how to fish. Yet skilled fishers cease to do so.

Whether or not a man is giving attention to his fishing depends on whether he looks at the water, listens to the rustling of the reeds, and thinks about the habits of fish or whether he looks at his watch, listens to the aeroplane in the sky and worries about his children’s education and his stocks and shares. The attentive is distinguished from the inattentive fisherman by the relevance or irrelevance to his fishing of what he gives his attention to. He is not to be distinguished by whether he watches himself fishing in the way that he could watch another fishing—as he might if he were a novice or a writer on the art of fishing.⁴⁴

White’s insight is that someone who skillfully pursues a goal (for example, fishing) directs her attention onto objects that are relevant to that goal (for example, the reeds, water, and fish), not onto the fact that she is pursuing that goal. I agree, although I add that we stay on task through guidance.

Goals are not always objects of awareness during goal-directed attention. Yet there is a common phenomenal core to all goal-directed attention: goals are (at least in part) “phenomenological frames”. When you look at a painting, you don’t focus on the frame. Rather, the frame serves to separate the painting from its surroundings. Similarly, when your attention is goal-directed, you seldom focus on your goal. Rather, your goal serves as a frame, carving experience into distractions and relevant information. You experience this framing through the guidance of attention. While fishing, for example, a passing airplane *feels like a distraction* and your attention is guided away from it. In contrast, rustling reeds *feel relevant*: your attention is drawn to the reeds and guided back to them when distracted (Figure 3). The

⁴⁴Alan White *Attention* (Oxford: Basil Blackwell, 1964): p. 16. For an excellent discussion of this case, see Aaron Henry “An Agent of Attention” (Doctoral Dissertation: University of Toronto, 2019).

Figure 3: Goals as phenomenological frames. Goal-directed attention is guided away from distractions (pictured in black) and guided towards relevant information (pictured in gray). In this way, experience is carved into felt distractions and relevant information.

novice driver's experience is framed in a similar way. She maintains an appropriate frame by calling her goals to mind, "Check your mirrors and blind spot!" As a result, her attention is guided towards relevant information—what's in her mirrors and blind spot—and away from distractions, such as her errant thoughts and buzzing phone. Through guidance, goals carve the novice's experience into felt distractions and relevant information, just as they do for the expert. Phenomenological frames are thus a common factor between disparate kinds of goal-directed attention.

In contrast, phenomenological frames are absent during mind-wandering. Your attention may wander to various goals, such as a quiz or camping trip. Yet goals do not frame the wandering mind, carving experience into felt relevancies and distractions. For you do not feel distracted when your attention shifts; you simply drift on.

The guidance of attention can manifest in two kinds of experiences. First, the *negative* phenomenology of feeling *pulled back* from distractions. Sometimes, one also has the *positive* phenomenology of feeling *drawn towards* relevant information. This positive phenomenology is associated with my first condition for guided attention: that the agent reliably attends to goal-relevant information. We should not over-intellectualize these experiences. Felt distraction and relevance are *meta-cognitive feelings*. Other meta-cognitive feelings include the "tip of the tongue" phenomenon and the "feeling of warmth" (when you experience yourself approaching a solution). Crucially, meta-cognitive feelings are not intellectually demanding: one need not possess the explicit concept *distraction*, for example, to experience a buzzing smartphone as distracting. (Some even argue that meta-cognitive feelings have non-conceptual contents and

are present in non-human animals,⁴⁵ though I remain neutral.)

I define guided attention partly in terms of metacognitive *feelings*. I incorporate phenomenology into my definition to explain why the guidance of attention is personal-level. Guidance is often sub-personal. For example, Frankfurt classically notes that pupil dilation is guided but “is not under his [the person’s] guidance. The guidance in this case is attributable only to the operation of some mechanism with which he cannot be identified.”⁴⁶ All guidance mechanisms compute error signals (for example, that one’s pupils are over-dilated) and adjust behaviour in response to these signals (for example, by narrowing one’s pupils). But guidance bypasses the person when these error signals are unconscious and sub-personal. The mechanisms that guide attention broadcast their error signals—felt distractions—to consciousness. This is why I say that such signals are personal-level: *the person* feels distracted. She then comes back on task in response to this personal-level feeling.

One virtue of my account is that it explains why the guidance of attention is personal-level during skilled actions. Consider the skilled fisher, who guides her attention towards signs of fish (for example, reeds and ripples) but cannot explicitly tell you what she’s looking for. Some philosophers would deny that this guidance is personal-level. For example, Wu⁴⁷ would say that the fisher’s attention to the reeds is automatic, since she has no explicit intention to attend to the reeds. On my view, the fisher’s guidance is personal-level because she feels distracted by the airplane and thus brings herself back to fishing. My answer coheres with philosophers who argue that skilled actions are agential, not automatic, because they are consciously guided.⁴⁸

To weaken my view, one could argue that some unconscious error signals are personal-level and that the person guides her attention in response to those signals. For example, a fisher’s unconscious adjustments to her attention could count as personal-level guided attention. I’m sympathetic to this view, which respects the spirit of my own because it requires that the guided agent responds to personal-level error signals. But its proponent owes us an alternative account of what makes an error signal personal-level. This account must be (a) strong enough to exclude sub-personal guidance (for example, pupil dilation) but (b) weak enough to allow for personal-level guided attention during skilled actions. Until someone delivers on (a) and (b), I will stick with my phenomenal account of guidance.

Whether felt distraction is *sufficient* for guided attention depends on whether this feeling can be causally inert.⁴⁹ Inert felt distraction would not be the output of a guidance mechanism or dispose the agent to return to her task. But guided attention occurs only when a guidance mechanism outputs its error signals to consciousness. So causally inert felt distraction would not suffice for guided attention.

⁴⁵Proust, *The Philosophy of Metacognition*, *op. cit.* and John Dunne, Evan Thompson, and Jonathan Schooler “Mindful Meta-Awareness” *Current Opinion in Psychology* xxviii (2019): 307–311.

⁴⁶Frankfurt “Problem of Action,” *op. cit.*, p. 159.

⁴⁷*Attention*, *op. cit.* 33

⁴⁸Brownstein and Madva “The Normativity of Automaticity,” *op. cit.*, and Railton “Practical Competence,” *op. cit.*.

⁴⁹This depends on whether a phenomenological duplicate of a motivational state *M* can have a different functional role than *M*. In other words, is qualia inversion possible for motivational states? See Tim Crane “Intentionality as the Mark of the Mental” in Anthony O’Hare ed. *Current Issues in Philosophy of Mind* (OUP, 1998): 520–533.

4.2 Goal-Directed Attention and Felt Distraction

I am committed to a claim that might seem strange: felt distraction partly constitutes goal-directed attention. Goals are phenomenological frames because they carve experience into relevant information *and felt distractions*. I therefore deny the natural view that goal-directed attention is the absence of distraction. In contrast, Mole argues that someone attentively performs a task (that is, their attention is goal-directed) only if no cognitive process that could subserve that task is otherwise occupied.⁵⁰ Consider a fisher whose attention falls upon a passing airplane. Mole would say that she is inattentive, because cognitive processes that could subserve fishing are occupied with the airplane. In contrast, I hold that felt distraction is compatible with goal-directed attention. So long as the fisher *feels* distracted by the airplane, her attention still counts as goal-directed. For goal-directed attention manifests in two kinds of situations: (a) when one is focused on relevant information and (b) when one feels distracted and is pulled back to one's goal.

My analysis of distraction flows from a general feature of agency. Guided action is not always successful. What matters is how agents *experience and respond* to errors.⁵¹ Consider a waiter who is guided to balance his stack of plates (§ 2). His guidance manifests in moments where the plates begin to slip and he is drawn to rebalance the stack. Guidance does not require that the waiter always balances the plates perfectly; this is too much to ask. Rather, what matters is whether he experiences lapses *as errors*. When the plates begin to slip, is the waiter drawn to rebalance them or does he let them fall unchecked?

Guidance generally depends on how you experience and respond to errors. The guidance of attention depends on how you experience and respond to errors of attention: namely, distractions. The attentive fisher experiences a passing airplane as a distraction: this is part of what makes her goal-directed. Guided attention doesn't require that the fisher always maintain perfect concentration; this is too much to ask. Rather, guided attention requires that the fisher experiences lapses *as distractions*. When she focuses on an airplane, is she drawn back to fishing, or does her mind wander unchecked?

I have focused on agents who are guided by one goal. But agents can be guided by multiple goals that pull in conflicting directions. Consider an overworked parent who is home with a sick child. While making chicken soup, he might be frantically checking his child's temperature and reading angry client emails. This parent might constantly, and poignantly, feel distracted. While checking his child's temperature, for example, he may feel pulled towards his emails and stove. My view implies that he is guided towards all three goals simultaneously, and that his felt distraction reflects a conflict between these goals (interestingly, the etymology of "distraction" reflects this phenomenology of being pulled in opposite directions. The Latin root of "distract" is *distrahere*, meaning to draw or drag (-*trahere*) apart (*dis-*)).

My theory has another advantage: I allow for mind-wandering at *rest*, when you have no goal to be *distracted from*

⁵⁰ *Attention as Cognitive Unison*, *op. cit.*, 51.

⁵¹ Railton "Practical Competence" *op. cit.*, p. 9.

(§ 1). Suppose you are lounging in an armchair, doing nothing in particular, when your mind wanders from tea, to camping, to a joke. I explain why your mind is wandering: you are not guided to *remain* on any topic. Rather than *feel distracted* when your attention shifts from tea to camping, for example, you simply drift on. Unlike my theory, competing views struggle to account for mind-wandering at rest.⁵²

4.3 Categorical Basis of Guidance

My analysis of guidance is dispositional. Specifically, it includes the following counterfactual: if the agent were distracted, she would feel pulled back. Dispositional analyses are notoriously vulnerable to counter-examples that trivially satisfy the relevant counterfactuals.⁵³ My theory is no exception. Imagine a mathematician who fanatically guides her attention to a proof. She is so focused that the closest possible world where she gets distracted is one where the roof collapses. But in this world, she would not bring her attention back to math. Rather, she would shift to the disaster at hand! Thus, the mathematician does not satisfy the counterfactual in my analysis of guidance. So my view seems to imply that her mind is wandering!

My reply appeals to the categorical basis of guided attention. I will state this reply in the abstract and then fill in empirical details. A disposition's categorical basis is the set of properties that give rise to that disposition under normal conditions. Call the categorical basis of guided attention ' $\mathcal{C}$ '. Under normal conditions, the presence of $\mathcal{C}$ is equivalent to my dispositional analysis. But conditions are not always normal, as in the case of our fanatical mathematician. She lacks the dispositions characteristic of guided attention. But she still tokens $\mathcal{C}$, as evidenced by her focus on the proof. So her attention is guided.

This reply is complete only once we identify $\mathcal{C}$. Fortunately, my previous work defends a theory of the categorical basis of guided attention.⁵⁴ For simplicity, let's focus on the guidance of intellectual attention: specifically, attention to episodic memory and imagination.⁵⁵ Intellectual attention depends on the medial-temporal default sub-network (DN_{MTL}), which (re)activates memories and imaginings.⁵⁶ During guided attention, control and/or salience networks place top-down constraints on the DN_{MTL} . As a result, one's memories and imaginings are guided to relevant information. Mind-wandering occurs when control and salience networks weakly constrain the DN_{MTL} , which frees the DN_{MTL} to generate a meandering stream of memories and imaginings.

One might worry that my dispositional analysis is now eliminable. Yet this analysis does explanatory work: it

⁵²Christoff, "Undirected Thought," *op. cit.*, and Seli et al. "Mind-Wandering as a Natural Kind," *op. cit.*.

⁵³Robert Shope "The Conditional Fallacy in Contemporary Philosophy" *This Journal* lxxv,8 (1978): 397–413.

⁵⁴Christoff, Irving et al. "Mind-Wandering as Spontaneous Thought," *op. cit.*, and Irving and Glasser "Mind-Wandering: A Philosophical Guide," *op. cit.*.

⁵⁵Perceptual attention guidance depends on top-down constraints on sensorimotor cortices. See Christoff, Irving et al. "Mind-Wandering as Spontaneous Thought," *op. cit.*, Matthew Dixon, Kieran Fox, and Kalina Christoff "A Framework for Understanding the Relationship Between Externally and Internally Directed Cognition" *Neuropsychologia* i (2014): 1–10, and Maurizio Corbetta and Gordon Shulman "Control of Goal-Directed and Stimulus-Driven Attention in the Brain" *Nature Reviews Neuroscience* iii,3 (2002): 201–215.

⁵⁶Jessica Andrews-Hanna, Jonathan Smallwood, and Nathan Spreng "The Default Network and Self-Generated Thought." *Annals of the New York Academy of Sciences* mcccxi,1 (2014): 29–52 and Felipe De Brigard "Is Memory for Remembering?" *Synthese* xcxi,2 (2014): 155–185.

shows why a disparate set of neural mechanisms are all *guidance mechanisms*. Recall that constraints from control or salience networks both result in guided attention. Neuroscience cannot explain why these constraints form a unified category. Salience and control networks are composed of distinct neural regions and support different kinds of tasks. The frontal-parietal control network (FPCN) is typically active during executive control tasks.⁵⁷ Such tasks involve the effortful maintenance and manipulation of conscious information, often while agents explicitly represent their goals. When you plan a busy week, for example, your FPCN constrains your DN_{MTL}⁵⁸ and you therefore guide your memories and imaginings to your plans. In contrast, other cases of guided attention bypass control networks and instead result from the *salience network*'s constraints on the DN_{MTL}.⁵⁹ The salience network may support skilled actions, where we effortlessly guide attention to salient, goal-relevant, information. When a skilled fisher effortlessly imagines where to anchor her boat, for example, her salience network may constrain her DN_{MTL}. As a result, she may effortlessly guide her attention to anchoring spots.⁶⁰

My dispositional analysis explains why constraints from the control and salience networks form a unified category. Under normal conditions, both constraints give rise to the characteristic dispositions and phenomenology of guided attention and thus to mental action. Action theory tells us what unifies controlled and skilled guided attention, not neuroscience.

My theory of guided attention has two complementary parts: one neural and the other action-theoretic. My neural model generates empirical predictions and identifies the *categorical basis* of guidance, which we need to avoid counter-examples. My action-theoretic model captures why guided attention is a kind of mental agency, with a distinctive causal basis, dispositional profile, and experiential character. My action theoretic model therefore captures why disjunctive forms of guidance form a *unified category*.

I unify the category of guided attention in a different way than other philosophers. Buehler holds that executive control is constitutive of guided attention, in the actual world and for creatures like us.⁶¹ In contrast, I argue that cases like skilled guided attention bypass executive control. We must look to action theory, not neuroscience, to see what unifies guided attention in "creatures like us." Watzl and I agree that a disjunctive set of neural mechanisms result in guided attention, including executive control⁶² and salience⁶³. Yet Watzl doubts that we can give an informative, reductive analysis of guidance⁶⁴ that applies to all cases. In contrast, I reductively define guidance in terms of its

⁵⁷For meta-analyses, see Claudia Rottschy et al. "Modeling Neural Correlates of Working Memory" *Neuroimage* LX,1 (2012): 830–84 and Adrian Owen et al. "N-Back Working Memory Paradigm" *Human Brain Mapping* xxv,1 (2005): 46–59.

⁵⁸Nathan Spreng "Default Network Activity, Coupled with the Frontoparietal Control Network, Supports Goal-Directed Cognition" *Neuroimage* liii,1 (2010): 303–317.

⁵⁹Christoff, Irving et al. "Mind-Wandering as Spontaneous Thought," *op. cit.*

⁶⁰Salience networks also guide attention to affectively relevant information Christoff, Irving, et al. "Mind-Wandering as Spontaneous Thought," *op. cit.* Elsewhere, Aaron Glasser and I argue that affective guidance is a form of mental action: "Affective Control: Obsessive Rumination as Action" *Unpublished Manuscript*. Since this paper does not cover affective guidance, I focus on the salience network's role in skilled action.

⁶¹*Psychological Agency-Guidance of Visual Attention* (Doctoral Dissertation: UCLA, 2019): Chapter 4.

⁶²*Structuring Mind*, Chapter 7.

⁶³*Structuring Mind*, Chapter 6; Irving, "Mind-wandering is Unguided Attention"; Christoff, Irving, et al. "Mind-Wandering as Spontaneous Thought".

⁶⁴*Structuring Mind*, 67.

characteristic dispositions and phenomenology, which are common factors between guidance by the executive and by salience.⁶⁵

5 Between Mental Action and Passivity

We can now return to our most difficult question from § 1, which frustrated even the Akrasia Answer. What ingredient of active, goal-directed, thinking is missing during *intentional* mind-wandering? My answer is guidance. In this sense, intentional mind-wandering is passive. Yet intentional mind-wandering is subject to what I call “meta-control”: one actively initiates or maintains an unguided mode of thought without controlling *where* your attention is directed. Intentional mind-wandering therefore occupies an under-explored middle-ground between agency and passivity (§ 5.1). I will extend similar machinery to other cases (for example, brainstorming) that blur the line between active and passive thought (§ 5.2).

5.1 Intentional Mind-Wandering and Meta-Control

Intentional mind-wandering is a puzzling phenomenon. On the one hand, people frequently report “allowing [their] thoughts to wander on purpose”⁶⁶ in the the lab, the classroom, and everyday life.⁶⁷ Such reports have led to a lively psychological research program on “intentional mind-wandering”. On the other hand, *intentional mind-wandering* seems almost paradoxical: how can mind-wandering, a paradigmatically passive experience, be done on purpose?

My theory allows for two kinds of intentional mind-wandering (Figure 4). First, one can intentionally *initiate* mind-wandering. Suppose you are exhausted during a boring talk and decide to let your mind wander. You don’t choose *what* to think about, however, and after your initial decision, you cede control as your thoughts drift from slides, to camping, to coffee, and so on. Your choice to initiate mind-wandering is intentional, but your attention then wanders unguided.

Second, one can actively *maintain* a stream of wandering thoughts. Consider Walter, who ambles through a park to decompress. Walter lets his thoughts drift where they will—from a creature rustling, to a student’s vexing question, to an awful pun. So far, this is a standard case of mind-wandering. What complicates matters is that Walter *actively maintains* his wandering state of mind, allowing no thoughts to seize his attention. For example, Walter’s attention is briefly gripped by an uncomfortable memory: a student, crushed after he was caught plagiarizing. Walter quickly notices that his fixation on the memory has disrupted his relaxation. So after a moment of frustration, Walter lets his thoughts drift once more. What disrupts Walter’s relaxation is not that he remembers the plagiarist *per se*. Walter often

⁶⁵Watzl also argues that all attention is guided; indeed, this is a central thesis of his book. If I am correct, mind-wandering is therefore a counter-example to Watzl’s theory. See § 1 for my objections to his account of mind-wandering.

⁶⁶Kane et al. “For Whom the Mind Wanders and When,” *op. cit.*

⁶⁷For a review, see Seli et al. “Mind-Wandering With and Without Intention,” *op. cit.*

Figure 4: Two kinds of intentional mind-wandering. One can A) deliberately initiate and/or B) actively maintain an unguided stream of attention.

finds it relaxing to briefly recall and move on from unpleasant memories; doing so helps him “let go.” Rather, Walter is frustrated because his attention is *fixated* on the plagiarist, which alters the meandering flow of his thoughts. Put another way, Walter controls his thinking under the description, *don’t fixate on anything, just let your mind wander*, not under the description, *don’t remember the plagiarist*.

Walter might appear to be a counter-example to my theory. To maintain his wandering state of mind, Walter monitors and regulates an aspect of his thoughts in precisely the way required for guidance. Walter *guides his mind to wander*. Perhaps, then, mind-wandering is not *unguided* attention after all.

Despite appearances, my definition correctly classifies this case. Walter’s mind is wandering because he is not guided to *focus his attention* on any information. By actively maintaining his mind-wandering, Walter ensures that there is no information ι such that, if his attention weren’t focused on ι , he would feel distracted and thereby be disposed to return to ι . Walter monitors and regulates a higher-order feature of his mind: whether his attention is guided. But this does not amount to guided attention, since meta-control places no first-order constraints on *where* attention is focused.

Walter’s case contains a general lesson. Mind-wandering is incompatible with *first-order* guidance that operates on the focus of attention. Yet mind-wandering is compatible with *meta-control*, which operates on the mechanisms that guide attention. Specifically, one can actively suppress the guidance of attentional focus and cultivate a wandering mode of attention. Such intentional mind-wandering lacks a central ingredient of goal-directed thinking: first-order guidance. This absence is reflected in Walter’s phenomenology. During goal-directed thought, goals are *phenomenological frames* that carve experiences into relevant information and felt distractions. By design, such frames are absent during Walter’s intentional mind-wandering. Instead, Walter cultivates an unframed mode of attention, where no first-order information feels like a distraction. In other words, Walter cultivates a wandering mind.

Walter’s case also furnishes responses to skeptics about intentional mind-wandering.⁶⁸ Skeptics could object that cases where one merely decides to *initiate* mind-wandering are unintentional for two reasons. First, deliberate initiation

⁶⁸Samuel Murray and Kristina Krasich “Can the Mind Wander Intentionally” *Mind & Language* (2020).

is insufficient for intentional action, since agents must also *maintain* actions.⁶⁹ Second, one could object that deliberate initiation involves only *indirect* control.⁷⁰ To initiate mind-wandering, one might perform some *other* action—say, taking a walk—to *cause* one’s mind to wander. But this does not make mind-wandering intentional, any more than counting sheep to fall asleep makes falling asleep intentional. For agents must *directly* control mental actions.⁷¹

Walter’s case avoids both skeptical arguments. First, Walter not only initiates but also *maintains* his mind-wandering. Second, Walter does not just maintain some intermediate action (for example, walking), which causes his mind to wander. Rather, Walter uses meta-control to directly suppress the first-order guidance of attention. Since this lack of guidance partially *constitutes* mind-wandering, Walter directly maintains a constitutive part of mind-wandering. So Walter’s mind-wandering is intentional but unguided. Put more provocatively, Walter *intends to be passive*.

5.2 Hierarchical Structure

Strictly speaking, intentional mind-wandering may be *sui generis*. Few, if any, other mental actions place *no* frame on attention. But certain cases of goal-directed thought are more similar to intentional mind-wandering than others.⁷² To motivate this idea, consider the following cases:

(*Algebra Homework*) Paolo knows exactly where to focus when he does algebra: inside brackets first, then exponents, and so on. So Paolo guides his attention to whatever part of the problem he is currently solving.

(*Cryptic Crossword*): Jonathan doesn’t solve cryptic crosswords in a linear manner. Rather, his attention bounces between clues. Jonathan always guides his attention to *some* specific clue, but which one is up for grabs.

(*Brainstorming*) Kalina is brainstorming about her term paper. Her attention is guided, but only to the following extent: her topic must pertain to Dennett’s *Consciousness Explained*. Aside from this restriction, Kalina lets her attention drift freely.

Suppose that all three agents are goal-directed: they would feel pulled back when distracted. Even so, each case seems progressively less guided, progressively more like mind-wandering. We can put the point in terms of phenomenological frames. Paolo, Jonathan, and Kalina all experience their goals as phenomenological frames, in that complete irrelevancies (for example, buzzing smartphones) feel distracting. Yet these frames let attention drift to varying degrees. Paolo’s attention doesn’t drift at all—he focuses on whatever part of the problem he is currently solving. Jonathan’s attention drifts between specific clues, albeit in no apparent order. Kalina’s attention drifts to any idea that pertains to *Consciousness Explained*.

⁶⁹ Andrei Buckareff “How (Not) to Think About Mental Action” *Philosophical Explorations* viii,1 (2005): 83–89 and Mele “Mental Actions,” *op. cit.*.

⁷⁰ Murray and Krasich “Can the Mind Wander Intentionally?,” *op. cit.*

⁷¹ Mele “Mental Actions” and Fabian Dorsch “Judging and the Scope of Mental Agency” in *Mental Actions*, *op. cit.*.

⁷² John Sutton “Carelessness and Inattention” in Charles T. Wolfe & Ofer Gal, Eds., *The Body as Object and Instrument of Knowledge* (Springer, 2010) and Christoff, Irving, et al. “Mind-Wandering as Spontaneous Thought,” *op. cit.*, 718–731.

(a) Paolo’s hierarchically structured goal. Paolo’s attention is guided to information relevant to his *current* sub-goal.

(b) Jonathan’s less structured goal. Jonathan’s attention is guided to information relevant to his sub-goals, but in no particular order.

(c) Kalina’s unstructured goal. Kalina’s attention freely drifts to anything relevant to her overarching goal, but not complete distractions (for example, her phone)

Figure 5: Goals—and by extension guided attention—have varying degrees of hierarchical structure

To explain gradations in the guidance of attention, we need new machinery: hierarchically structured goals. Certain goals have more hierarchical structure than others. Paolo’s algebraic goal specifies sub-goals (solve inside brackets, calculate exponents, and so on) and an order of operations (*BEDMAS*; Figure 5a). Jonathan’s cryptic crossword specifies sub-goals (solve 1 across, 12 down, and so on) that are not ordered in time (Figure 5b). Kalina has an overarching goal while brainstorming but no subgoals (Figure 5c). Indeed, Kalina is brainstorming *because* her ideas are unstructured.

Guided attention—and thus phenomenological frames—inherits this hierarchical structure (or lack thereof). Paolo guides his attention to information that seems relevant to his *current* sub-goal. Paolo’s experience is framed accordingly: when he calculates a product, for example, sums feel like distractions. Jonathan guides his attention to information that seems relevant to *some sub-goal*, some clue, but drifts between clues unchecked. Kalina’s attention drifts to anything relevant to her overarching goal. She would feel distracted only if her attention fell on something completely unrelated (for example, her phone). Each case of attention is therefore guided with less structure than the last. So each case is more similar to intentional mind-wandering, where attention is not guided at all. Mental action lies on a gradient between structured, goal-directed, thought and intentional mind-wandering.⁷³

6 Anti-Skepticism About Mental Action

I hold that goal-directed thinking is a pervasive form of mental action. My theory is therefore at odds with skeptics such as Strawson, who argues that “no actual natural thinking of a thought, no actual having of a particular thought-content, is ever itself an action.”⁷⁴ I will consider two of Strawson’s arguments and argue that neither undermines my account of mental action.

Strawson first argues that thought cannot be caused in the right way to be active.⁷⁵ Suppose that action has the following form: (a) I have a goal G ; (b) I believe that ϕ ing is a means to G ; so (c), (a) and (b) cause me to ϕ . If so, goal-directed thinking must have a similar form: (a) I have a goal G ; (b) I believe that some information $\mathcal{C}$ is relevant to G ; so (c), (a) and (b) cause me to have a conscious thought with the content $\mathcal{C}$. Imagine, for example, that Julio is planning his lawn bowling outfit. He believes that the information *grass is green* is relevant to his wardrobe choices. So he consciously thinks *grass is green*. Here’s the problem: Julio’s belief *is* a thought with the content *grass is green*. So that belief, according to Strawson, cannot be what *causes* Julio to think *grass is green*. Generalizing, the problem

⁷³For simplicity, I have assumed that a determinate set of information is relevant to each goal (even if, like Kalina, one has no sub-goals). One would need new machinery to allow for ambiguity in *what information is relevant*. Here is a sketch of one possible account. Consider an agent $\mathcal{A}$ whose attention is guided by a goal τ . Assume $\mathcal{A}$ has a “centrality ranking” over the information they take to be relevant to τ . Information is lowest on the centrality ranking when it is of uncertain relevance to τ and highest when it is critically relevant to τ . The higher some information ι is on $\mathcal{A}$ ’s centrality ranking, the more $\mathcal{A}$ will (a) feel drawn to ι , (b) likely focus on ι , and (c) likely return to ι when distracted from τ . When $\mathcal{A}$ is uncertain about whether ι_u is relevant to τ , $\mathcal{A}$ will therefore (a) feel weakly drawn to ι_u , (b) likely not focus on ι_u , and (c) likely not return to ι_u when distracted from τ .

⁷⁴Strawson “Mental ballistics,” *op. cit.*, p. 234.

⁷⁵*ibid.*, pp. 234–235. I thank an anonymous reviewer from *Journal of Philosophy* for helping me to explicate Strawson’s argument and form my response.

is that the causal antecedents of any goal-directed thought already contain that very thought.⁷⁶

My response depends on how we interpret condition (b). A strong interpretation of (b) requires that the agent *explicitly and consciously* believes that ϕ -ing is a means to G . Julio, for example, must explicitly and consciously believe that the information *grass is green* is relevant to planning his wardrobe. But this belief *is* a conscious thought with the content *grass is green*. So it cannot be what *causes* Julio to consciously think *grass is green*. So on the strong interpretation, Strawson's objection works. But we should reject this interpretation, since it over-intellectualizes action. Goals are rarely objects of awareness during goal-directed thinking (§ 4.1). A fortiori, goal-directed thinkers rarely token explicit beliefs of the form *some information C is relevant to my goal*. Similarly, skilled bodily actions are typically not preceded by explicit, conscious beliefs of the form ϕ -ing is a means to G . Furthermore, children and animals can arguably act even though they cannot form such conceptually sophisticated beliefs. We therefore have general reasons to accept a weaker interpretation of the causal antecedents of action.

A weak interpretation of (b) allows that the agent can *implicitly* believe that ϕ -ing is a means to G . On my drive home, for example, I do not explicitly recall my belief that I should turn on Stribling. Yet this implicit belief still guides my actions. Similarly, when Julio thinks *grass is green*, he is not guided by an explicit and conscious belief that this information is relevant to his wardrobe. Yet Julio implicitly believes this; and this implicit belief guides his thinking. More generally, goal-directed thinking typically has the following form: (a) I have a goal G ; (b) I implicitly believe that some information C is relevant to G ; so (c), (a) and (b) cause me to have a conscious thought with the content C and to focus my attention on that thought. But then Strawson's first objection does not arise. For my implicit belief in (b) can be unconscious and is therefore not identical to the explicit, conscious thought that occupies my attention in (c). Rather, the former causes the latter.⁷⁷

Strawson's second skeptical argument is that most thinking is passive because it is *ballistic*. Just as someone's control over a bullet ends once she pulls the trigger, a thinker's control ends once she primes herself to think about a topic. Afterwards, her thoughts "spring up" passively.⁷⁸ Strawson argues that one regains agency only when one feels distracted and "has to shepherd or dragoon one's wandering mind back to the previous thought-content."⁷⁹ Strawson could therefore concede that (implicit) goals and beliefs causally influence the content of one's thoughts, insofar as they prime one to think about certain topics and help one return from distractions. Yet he could respond that these causal influences are ballistic: the thinker's goals and beliefs do not guide her train of thoughts while it is unfolding.

Contra Strawson, two components of guidance are present during the train of thought. First, agents are drawn to goal-relevant information (§ 4.2). Second, the mechanisms that guide attention monitor for errors (that is, distractions).

⁷⁶Strawson appeals to this argument to show that we cannot actively think a thought with the content *grass is green*: "A comprehending entertaining of grass is green has already occurred previously-it has already been held in mind as an intended object of thought" *ibid.*, p. 235.

⁷⁷One might object that my guidance is sub-personal, since my belief is unconscious. Yet I argue in § 4.1 that personal-level mental actions are often guided by unconscious goals and beliefs. For the thinker still responds to personal-level metacognitive feelings. Strawson similarly concedes that "our thoughts and judgements are not in any sense not our own, or less our own, for not being direct products of consciousness," *ibid.*, p. 249.

⁷⁸*ibid.*, p. 229.

⁷⁹*ibid.*, pp. 231–232.

We *experience* error monitoring only when things go wrong (when we “dragoon our wandering mind”). But we are still guiding our thoughts when things go right (when our train of thought is on task). Consider an analogy to bodily action. Imagine a waiter who guides his movements while balancing a stack of plates. His guidance manifests in experience when things go wrong and the plates begin to slip. But his seamless movements are also guided, since he stands ready to correct errors that may occur. Similarly, goal-directed thinkers stand ready to correct distractions while on-task. So goal-directed thinking is guided, not ballistic.⁸⁰

7 Conclusion

Philosophers’ questions can be as important as our answers. What ingredient of bodily action is missing in mere behaviour? This question animates much great philosophy of action. An analogous question can animate the philosophy of mental action: what ingredient of active thinking is missing when the mind wanders? My answer—guidance is missing from mind-wandering—has led to insights about the causal basis, experiential character, scope, and reality of mental action. Mind-wandering is a unique case that helps us tease apart two causes of mental action: guidance and motivation. Mind-wandering also reveals how we experience our goals: not as objects of attention, but rather as phenomenological frames that carve experience into felt distractions and relevancies. Intentional mind-wandering is a limit-case of mental action. It involves a *sui generis* form of “meta-control,” where one actively cultivates a passive mode of thinking. My account of directed thinking also furnishes a response to mental action skeptics. The philosophy of mind wandering is embryonic. Yet it promises to breathe fresh life into old questions about action and experience. We can learn much about the mind from its strange tendency to wander. After all, we are creatures with drifting and directed minds.⁸¹

⁸⁰On an abstract level, bodily and mental passivity lack the same ingredient of action—guidance. Yet at a more granular level, they may differ. One potential difference concerns the default states of the body and mind. When we refrain from bodily action, our bodies remain still. When we refrain from mental action, our minds wander. This may be why guided attention functions primarily to bias and regulate thought, not to initiate thinking.

⁸¹I am indebted to comments from Dominic Alford-Duguid, Santiago Arango, Juan Pablo Bermudez, Aaron Glasser, Alison Gopnik, Benjamin Haas, Aaron Henry, Sonam Kachru, Sheisha Kulkarni, Harold Langsam, Trenton Merricks, Christopher Mole, Sam Murray, Jennifer Nagel, Diana Raffman, Bill Seager, Andrews Sepielli, Susanna Siegel, Walter Sinnott-Armstrong, Matt Soteriou, Ronnie de Sousa, Chandra Sripada, Evan Thompson, Sara de la Vega, and Sebastian Watzl and reviewers at *The Journal of Philosophy* and *MIND*. I also thank audiences at the University of Toronto, Berkeley, University of Virginia, Michigan, the American Academy of Religion, NYU, University of Oslo, Universidad de Antioquia, and Kings College London and my graduate seminars at the University of Virginia. Research for this paper was funded by the Social Sciences and Humanities Research Council of Canada, Templeton Foundation, and 3Cavaliers.