

## Letter

## Mind-Wandering as a Scientific Concept: Cutting through the Definitional Haze

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The recent surge of scientific research into mind-wandering has occurred amidst a definitional haze. ‘Mind-wandering’ has been used to refer to a wide range of mental phenomena, from attentional lapses to purposeful, task-unrelated planning; from free-flowing thought and creative idea generation to highly constrained, perseverative rumination. Should we continue to group these disparate phenomena under the umbrella of ‘mind-wandering’ despite the lack of scientific consensus on what mind-wandering is and what it is not? Or should we treat ‘mind-wandering’ as a scientific concept in need of a rigorous theoretical definition that distinguishes it from other types of thought?

In a recent Opinion article [1], Seli and colleagues argue that the field would be better served by continuing to use the term ‘mind-wandering’ as an undefinable umbrella term. According to these authors, “no single definition can capture all the facets and subtleties of mind-wandering, and neither logic nor empiricism can select among them.” [1]. Seli and colleagues call for adopting a ‘family-resemblances’ approach (see also [2]), in which inherently different types of thought are all “granted membership in the mind-wandering family,” despite having no “common thread” running through them. Although Seli and colleagues describe this as a “new approach” that needs to be adopted, this is the approach that the field has already

been tacitly endorsing in using ‘mind-wandering’ to refer to a diverse, and not necessarily related, set of mental phenomena.

Seli and colleagues correctly identify one of the problems with the current approach: “Researchers may thus be lumping together fundamentally different experiences into the same category.” [1]. In our view, a family resemblance approach, which groups together different and sometimes conflicting definitions of mind-wandering, will not help overcome this problem. Rather, this umbrella grouping is precisely what created the problem in the first place. A related problem, noted by Seli and colleagues, is that researchers often do not clearly define the specific type of mind-wandering they are studying, so that “broad claims are frequently made in separate studies and opinion pieces examining different varieties of mind-wandering, implying that these claims generalize.” [1]. One such frequent generalization is describing findings on task-unrelated thought [3–5] as indicating that people spend 30–50% of their waking lives “mind-wandering.” We agree with Seli and colleagues that researchers should include explicit definitions of the specific types of thought under investigation in each publication. However, we fear that the continued use of ‘mind-wandering’ as an umbrella term to refer to disparate types of thought may unintentionally promote the overgeneralizations that are already problematic.

Perhaps by grouping disparate types of thought into the “mind-wandering family” the family-resemblances view can help distinguish mind-wandering from other types of thought. This would require that we identify features that a thought should possess in order to be granted access to the family. However, according to Seli and colleagues, “there are no specific features that a thought must have to be granted membership in the mind-wandering

family.” [1]. Can we identify features that a thought should have in order to be denied membership in the family? Unfortunately, within the family-resemblances approach, the boundaries of the mind-wandering concept become even more porous in principle than they already are in practice: as long as at least one researcher refers to a type of thought as ‘mind-wandering’, this type of thought would become part of the “mind-wandering family.” Rather than helping to clarify what type of thought mind-wandering is, and what type of thought it is not, the family-resemblances view broadens the concept of ‘mind-wandering’ to make it synonymous with ‘thought’.

Can we ever hope to identify the defining features of mind-wandering that distinguish it from other types of thought? The answer, within the family-resemblances approach, is most definitely not. Seli and colleagues argue that, since researchers have already tried and failed to reach an agreed-upon definition of mind-wandering, we should abandon further efforts towards this goal. In contrast to Seli and colleagues, we see this current failure as a consequence of the limited scope of empirical efforts so far. For example, we have recently argued [6–9] that mind-wandering does have an essential, defining feature when viewed from a dynamic perspective (Box 1). Since empirical research into the dynamics of thought [3, 10] is still gaining ground, it seems premature to abandon efforts to determine whether there may be a defining feature that can distinguish mind-wandering from other types of thought. There may also be other defining features, such as the ‘ease’ with which thoughts unfold [11], that have yet to be theoretically and empirically examined in depth..

Ultimately, for a research field to exist, it needs to have a definable focus that separates it from other fields. If we are unable to arrive at a definition that

## Box 1. The Dynamic versus the Family-Resemblances Framework: Some Points of Divergence

Both the dynamic [6] and the family-resemblances [1] frameworks agree that the mind-wandering category has graded membership. However, one fundamental disagreement between the two frameworks concerns whether some features of thought are more important than others when it comes to determining membership in the mind-wandering category. According to the family-resemblances framework, no features of thought are more defining than others. In contrast, according to the dynamic framework, mind-wandering does have a defining feature: during mind-wandering, thoughts arise and proceed in a relatively free, unconstrained fashion. As an important consequence, the two frameworks disagree on whether highly constrained types of thought, such as perseverative task-unrelated thought, should be categorized as mind-wandering (Table I). The dynamic framework argues that they should not, because it views the lack of strong constraints on thought as an essential dynamic feature of mind-wandering. In contrast, the family-resemblances framework argues that they should, because such highly constrained types of thought have previously been labeled ‘mind-wandering’ by some researchers.

Should highly constrained types of thought be categorized as mind-wandering? We believe that debating and ultimately achieving a consensus on what types of thought should *not* be categorized as mind-wandering is crucial for moving beyond the current practice of lumping together fundamentally dissimilar types of thought.

Table I. Examples of Different Types of Thought from [1] and How They Are Classified under Different Frameworks

Examples from [1]	Is it mind-wandering?	
	Dynamic	Family resemblances
Perseverative task-unrelated thoughts	✗	✓
Purposeful thoughts about holiday activities (task unrelated)	✗	✓
Deliberately planning a dinner date while sitting in calculus class	✗	✓
Allowing one’s mind to wander while sitting by the lake	✓	✓

distinguishes mind-wandering from other types of thought, there is no ‘field of mind-wandering research’ separable from research on thought in general. Our dynamic framework [6] privileges the lack of strong constraints on thought as a necessary feature of mind-wandering. This approach is certainly incomplete and open for debate; the family-resemblances view, however, seeks to eliminate such debates, seeing them as “unproductive disagreement about ‘mind-wandering’ definitions.” [1]. In contrast, we believe that determining what features of thought are essential for mind-wandering is crucial for the viability of the field itself. If we cannot achieve that, it is only a matter of time until people outside the field come to realize that, after all, the mind-wandering emperor really has no clothes.

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