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COMMENTARY

A developmental understanding of the self may provide valuable insight into the experience of selfhood in dementia

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Abstract

The self is a complex and multidimensional construct with both reflective and experiential aspects. The experience of selfhood has been well documented in both developmental psychology and dementia research. However, these research fields have rarely come together. This is unfortunate since a lack of sensitive measurement of self in adults with dementia has historically led to erroneous assumptions that people diagnosed with dementia experience total loss of self. Dementia causes profound self-alterations, particularly associated with gaps in autobiographical and semantic self-knowledge. However, important experiential manifestations of self may remain intact. Focusing on the emergence of different levels of self-processes in early childhood, and reflecting on conceptual similarities as well as methodological perspectives, the aim of this article is to explore how developmental approaches may be applied to provide a promising new direction into the experience of selfhood in dementia.

KEYWORDS

dementia, early childhood, selfhood, self-processes

Although humans tend to experience a unified sense of 'self', the self is not a single, unitary entity but rather a set of distinct, yet related, self-processes differing in functional complexity (Klein & Gangi, 2010). In the late 19th century, William James first conceptualized the self as consisting of two underlying aspects, the 'I' self (i.e., the self as subject)

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and the 'Me' self (i.e., the self as object) (James, 1890). The 'I' self refers to the subjectivity of the self-experience as being 'mine', residing in the corporeality of the lived body. It is through the emergence of an 'existential base', establishing that 'I' exist, that the 'Me' self is 'produced' incorporating different reflective aspects of one's self-experience (McAdams, 1996, p.302). The notion that the self is a multidimensional construct, which can be both reflected upon objectively and experienced subjectively, is now well-established in developmental psychology (e.g., Rochat, 2003) as well as dementia research (e.g., Bomilcar et al., 2021). However, these research fields have rarely come together. Given that dementia causes profound self-alterations, partially associated with gaps in reflective autobiographical and semantic self-knowledge, there have historically been erroneous assumptions that people diagnosed with dementia experience total loss of self (Strikwerda-Brown et al., 2019). Mirroring obsolete opinions of an absence of self-awareness in infants (e.g., Locke, 1690/1995; Mahler et al., 1975), these assumptions are conceptually and methodologically flawed as they fail to appreciate the layered nature of self-processing, which should be explored using sensitive methods specifically developed for non-verbal populations. Focusing on the emergence of different levels of self-processing in early childhood, the key objective of this article is to explore how a developmental understanding of the self can potentially provide a promising new direction into the experience of selfhood in dementia.

1 | THE HIERARCHICAL DEVELOPMENT OF THE SELF

Mirror self-recognition has been traditionally considered the milestone in the development of reflective self-awareness in humans, which is commonly assessed using the mirror mark test (Amsterdam, 1972). In this test, children are surreptitiously marked on the forehead with rouge before being shown their mirror-image. By the age of 2 years, children typically connect the mirror-image with their body, as demonstrated by reaching toward the unexpected mark. When we look in the mirror we see 'Me', a particular combination of physical features that matches to our cognitive representation of who we are. However, we also feel the 'I', a sense of agency that arises from recognition that the movement of the self in the mirror is under our control. Mirror self-recognition may initially be underpinned by reflection on the agentive cues provided by the mirror-image, but children quickly come to build a permanent representation of their own features (Filippetti & Tsakiris, 2018; Nielsen et al., 2006), as captured unambiguously by photograph self-recognition (Courage et al., 2004). The ability to self-recognize signals the onset of what is often described as the narrative self (e.g., Gallagher, 2000), an explicit "idea of me" extended in time and intimately linked with autobiographical recollection, which provides the basis for the emergence of more sophisticated cognitive processes. Notably, at this age, the contemporaneous onset of self-recognition and autobiographical recall, as well as the developmental increase in abstract self-knowledge and episodic memory, are causally related (Ross et al., 2020). Nevertheless, it has also been suggested that prior to the manifestation of these narrative self-aspects, children have an experiential sense of their own self as early as infancy, related to an intrinsically subjective sense of 'mineness of experience' and subsequently the centrality of the bodily self as the anchor of this self-experience (Summa & Fuchs, 2015, p. 392). This reflects the prominent idea in child development that self-awareness has both reflective and experiential levels (Rochat, 2003).

From birth, these experiential aspects of selfhood are thought to be primarily based on intermodal perception and action linked to the bodily self (Koh & Wang, 2012). Accordingly, it has been suggested that the first aspects of the self to develop since the beginning of infancy are the ecological and interpersonal self, terms first conceptualized by Neisser (1988). The 'ecological self' refers to knowledge of the self in relation to the physical environment, which is developed through perceptual information of children's own body acquired through self-exploration and contingent proprioception (e.g., double touch response, see Rochat & Hespos, 1997), and ultimately self-other differentiation (Rochat & Striano, 2000). The 'interpersonal self' refers to knowledge of the self in relation to others manifested through self-agency (Rochat & Striano, 2000), which is the sense of having a causal influence on both the physical world by perceptual actions that are controllable and explorable (e.g., contingency learning task, see Lewis

et al., 1985) and the social world by reciprocal social interactions (e.g., still face paradigm, see Nagy, 2008). Through these early self-processes infants develop a sense of their body as being a 'differentiated entity, situated and agent in the environment' (Rochat & Striano, 2000, p.513).

This 'taxonomy' of reflective and experiential aspects of self-awareness in early childhood shares similarities with the conceptualisations of self in dementia, a neurodegenerative condition causing profound alterations in self-awareness (Mograbi et al., 2021). More specifically, it has been argued that dementia might result in selective deficits of self-processes, reflecting the idea that the self is a multidimensional construct that consists of diverse processes with different levels of complexity (Mograbi et al., 2021). One of the core psychological symptoms of dementia is a progressive deterioration of self-processing abilities, and research has demonstrated that higher-order manifestations of the narrative self are diminished in this condition (Huntley et al., 2021). Dementia's impact is particularly associated with gaps in autobiographical and semantic self-knowledge; memory difficulties linked with dementia may disrupt people's ability to update factual self-knowledge of themselves and, eventually, to access their own life narrative (El Haj et al., 2015). This is further linked with research findings demonstrating outdated self-representations in dementia, often reflecting young adulthood (Klein & Gangi, 2010), which might be associated with the subsequent difficulty in visual self-recognition (Caddell & Clare, 2010). However, emergent evidence focusing on experiential manifestations of the self has suggested that these facets of selfhood might be less vulnerable to dementia's impact (Huntley et al., 2021; Mograbi et al., 2021). This opens the possibility that the self might regress in dementia in the reverse order of development. Indeed, in line with this idea, a recent scoping review found that experiential aspects of self seem to be preserved in people with dementia while reflective self-processes seem to be altered (Mentzou et al., 2022).

Parallel to the developmental literature, Neisser's (1988) model of the self, specifically with regards to its ecological and interpersonal self, has also been usefully applied in dementia literature (e.g., Caddell & Clare, 2011). Given that these experiential aspects of the self are mostly, but not exclusively, situated in the present moment (Koh & Wang, 2012), they may be particularly applicable to an understanding of selfhood in dementia, since reflective self-processes related to the sense of self 'here and now' seem to be preserved even when temporally extended aspects of self diminish (Hutmacher, 2021). Understanding the corporeal complexity of the self, Kontos' (2005) notion of embodied selfhood, grounded to the pre-reflective level of experience, can be seen as the foundation of the 'ecological self' in dementia. Kontos (2005) argues that the bodily self is reflected in the spontaneity of people's actions, who, without necessarily explicit consciousness, still move their bodies in a coherent and purposive way, often within the context of social interactions (e.g., expressive gestures). Correspondingly, intact 'interpersonal self' is demonstrated in the way people with dementia exercise their agentive impact on the world, as reflected in the enjoyment over voluntary actions and personal choices as well as reciprocal communication and engaging relationships (Bomilcar et al., 2021; Caddell & Clare, 2011). It is important to note that the self-manifestations closely linked with experiences of 'here and now' are not solely pre-reflective (see Summa & Fuchs, 2015). Embodied and agentic self-experience expands beyond primitive aspects of self, incorporating different non-verbal, yet sophisticated, processes at a sensory and affective level to express the temporally extended history of one's life through nuanced and concrete ways (Hutmacher, 2021; Summa & Fuchs, 2015). This shows that there is an inner depth to the implicit manifestations of the self, which might not have been widely appreciated. Drawing parallels to the ecological and interpersonal selves in development, these aspects of self are sufficient to support a rich and psychological powerful experience of self, even when higher-order explicit self-processes deteriorate.

2 | THE SENSITIVE MEASUREMENT OF THE SELF

One of the reasons self-processes remain implicit before the second year of life is because linguistic and symbolic abilities have not yet reached functional sophistication, and do not have a significant role in the children's subjective experiences (Rochat, 2003). Consequently, the study of self-awareness in young children has employed

developmentally sensitive quantitative measures and tasks that do not rely on language skills nor place excessive cognitive demands on children. Only through development of these early childhood measures has a better understanding of children's self-processing been achieved, and the notion that infants might be considered a 'blank slate' (Locke, 1690/1995) roundly disproved. In a similar vein regarding dementia, comparable conclusions have historically been made for people diagnosed with dementia, erroneously claiming that the sense of self disintegrates "until there is nothing left" (Davis, 2004, p.375). Although this assumption has been widely disproved in the literature of the last decades (e.g., Strikwerda-Brown et al., 2019), many papers continue to foreground explicit aspects of selfhood using quantitative methods that were designed for healthy populations (e.g., autobiographical verbal recall, self-reported questionnaires). These cognitive tasks are dependent on higher-order processes such as self-reflection and insight, which are recognized to be negatively impacted in people with dementia (Strikwerda-Brown et al., 2019), but they are also reliant on non-self-specific abilities, which may lead to erroneously attributing lower self-functioning (Fazio & Mitchell, 2009). Furthermore, due to these high task demands, there is a lack of empirical research on people with later stages of dementia, who often have difficulty in communicating their experiences. This makes it challenging to understand the chronology of self-alterations in dementia (Huntley et al., 2021). The adaptation of developmentally sensitive quantitative research methods for this population might usefully be applied to address this gap in the literature and improve our understanding of the impact dementia has on selfhood.

Although the potential usefulness of developmental methods for dementia research has not been widely considered, self-recognition studies constitute a notable exception. In early childhood, visual self-recognition in various media, has been employed to explore the presence of the conceptual self, without placing verbal demands on children (Courage et al., 2004). This technique has also been used to explore visual self-representation changes across different stages of dementia (e.g., Biringer & Anderson, 1992), with studies showing that while people in the earlier stages successfully pass the tasks, those in advanced stages might have difficulties identifying their self-image (Caddell & Clare, 2010). However, visual self-recognition studies in dementia have been limited to standard mirror mark tests and verbal self-identification, and have not been adjusted to consider longitudinal trajectories (e.g., Courage et al., 2004; Nielsen et al., 2003) or informative adaptations of the canonical test designed to provide insights into sequential changes (e.g., Filippetti & Tsakiris, 2018; Nielsen et al., 2006) or social context (e.g., Kampis et al., 2021; Rochat et al., 2012; Ross et al., 2017). Moreover, it is important to consider that challenges with self-identifying one's specular image might not necessarily reflect non-functioning self-awareness in people with dementia. First, although mirror self-recognition is used to demonstrate the onset of the capacity for self-reflection in children, its absence does not necessarily imply a lack of self-reflective capacity in dementia; rather, there may be localized disruptions in physical self-recognition. Secondly, even if failures in mirror self-recognition are indicative of more global disruptions in self-reflection, concluding an absence of self from this evidence would ignore the layers of ecological and interpersonal selfhood that precede mirror self-recognition developmentally, and can also be measured non-verbally (e.g., Lewis et al., 1985; Nagy, 2008). The concerns with the mirror mark test demonstrate that self-recognition is a complex phenomenon, the mechanisms of which might not yet be fully understood. This reveals the exciting possibility that research on self-development in childhood can also benefit from considering the insights of dementia research, gaining a more nuanced understanding of self-reflective abilities.

Careful adaptation of developmental measures therefore has the potential to provide a promising new direction in the study of self-processes in dementia. Developmental science is based on creating measures which are playful, engaging and accessible, while considering young children's recognized limited capacity of attentional focus, understanding instructions and communicating a response (Howard & Melhuish, 2017). Studying self-processes in dementia should make similar considerations, aiming to use more sensitive, ecologically valid measures and focusing on those aspects of the self that people experience on a day-to-day basis (Caddell & Clare, 2010). Although self-awareness is a highly complex construct and its assessment renders conceptual and pragmatic challenges, the rich body of research available in infancy highlights that the multifaceted measurement of self need not be limited to its reflective aspects. It is important to note that we do not assume that dementia is comparable to a return to childhood, and we do not endorse the broader social implications such an infantilisation could have. People diagnosed

with dementia do not have the same cognitive abilities and psychological states as children. Their self-processing, cognitive, linguistic and affective capacities are qualitatively different than childhood and their experiences of 'I' and 'Me' are steeped in a life full of identity contents and contexts. Nonetheless, when exploring cognitive self-processing using quantitative methods, the developmental literature makes clear that several aspects of self might be manifested in experiential ways, and not open to reflective expression. Before making a scientific assessment of the impact of dementia on the self, it is therefore important to apply sensitive measures of selfhood, which recognize the communication challenges people with dementia often experience.

3 | CONCLUSION

Taken together, this article aimed to explore some reasons on why developmental approaches of studying the self have the potential to be applied to the study of self-related alternations in dementia, specifically focusing on conceptual similarities as well as methodological perspectives. Given the hierarchical nature of self-processing, research on development as well as dementia has demonstrated that self-awareness is constituted from both reflective and experiential aspects. Although theoretical frameworks of the self in early childhood have not been widely used in the other end of the lifespan, they could provide promising insights into which aspects of the self are less vulnerable to dementia's impact. A developmental understanding of selfhood, layering explicit reflection on agentic experience, may be of comfort to people with dementia and their families, as reflected in this infographic film developed by Ross et al. (2021): <https://discovery.dundee.ac.uk/en/publications/the-me-in-dementia>. Furthermore, developmental perspectives may allow for critical evaluation of the ways that cognitive self-processing has been quantitatively studied in dementia, and the extent that these methods provide an informative insight into the experience of selfhood in this condition. Whilst the varied cognitive difficulties linked with dementia could erroneously suggest a widespread pattern of self-alterations, using more sensitive and ecologically valid measures inspired by developmental research has the potential to provide deeper insight into a prevailing sense of self in people with dementia (Fazio & Mitchell, 2009).

AUTHOR CONTRIBUTIONS

Aikaterini Mentzou: Conceptualization; methodology; project administration; writing – original draft; writing – review and editing. **Josephine Ross:** Conceptualization; methodology; project administration; writing – original draft; writing – review and editing.

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DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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