

Jingle–Jangle Fallacies in L2 Motivational Self System Research: A Response to Al-Hoorie et al. (2024)

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In a systematic examination of scales commonly used in L2 Motivational Self System (L2MSS) research, Al-Hoorie et al. (2024) found discriminant validity problems. Raising jangle fallacy concerns, they argue that substantive research should be paused until validity issues are ironed out. However, validity at the measurement level is dependent on validity at the construct level. Replication attempts can fail when models are poorly theorized. To resolve problems at the measurement level, problems at the construct level need to be addressed.

1. A validation crisis

Research using the L2 Motivational Self System (L2MSS) (Dörnyei 2005, 2009) may have reached a watershed point. Alongside the (re)emergence of alternative frameworks, concerns about model qualities have been accumulating. In addition to questions involving the utility of a motivational model based on the self (MacIntyre 2022) and the modelling of L2 motivation as a self-system (Henry and Liu 2023), issues involve the conceptualization of model constituents (e.g. Papi et al. 2019; Al-Hoorie and Al Shlowiy 2020; Hiver and Al-Hoorie 2020), the adequacy of outcome variables (e.g. Al-Hoorie 2018; Hiver and Al-Hoorie 2020; Henry and Liu 2024) and measurement of the motivation generating mechanism (e.g. Thorsen et al. 2017). Reflecting concerns about measurement practices in L2 psychology (Sudina 2021, 2023; Arndt 2023), Al-Hoorie et al. (2024) have also identified problems of scale validation. Highlighting a ‘neglect of psychometrics’ and declaring a ‘state of validation crisis’, they have called for a moratorium where substantive research is paused ‘until issues with validity can be ironed out’ (15).

To illustrate the extent of validation problems, Al-Hoorie et al. (2024) compiled a list of 18 commonly used scales and administered them to a participant group of secondary learners of English. Findings revealed problems of content and discriminant validity. As they explain, the inability to identify distinct latent variables underpinning L2MSS components and an overlap between the ideal L2 self and self-efficacy beliefs indicate significant jangle fallacy problems:

Clearly, designs such as those used in the L2MSS tradition rest on the assumption that the variables in question indeed underlie distinct latent variables. The results of this study suggest otherwise, showing that there is a severe case of a jangle fallacy in the L2MSS tradition.

(Al-Hoorie et al. 2024: 15)

Jangle fallacy problems—where differently named constructs measure the same underlying phenomenon—are the consequence of a validation crisis (Al-Hoorie et al. 2024). However, validity at the measurement level is dependent on validity at the construct level.

2. Jingle–jangle fallacies

Minted by Kelley (1927), jingle–jangle fallacies involve the similarity and dissimilarity of investigated phenomena. Fallacies can arise at the measurement level and at the construct level. At the *measurement level*, fallacies occur when similarly named scales measure different constructs (a jingle fallacy), and when scales with dissimilar names measure the same or similar constructs (a jangle fallacy) (Marsh 1994; Block 1995, 2020).

At the *construct level*, jingle fallacies also involve assumptions of similarity. Because they bear the same or a nearly identical name, constructs that are conceptually distinct can be treated as equivalent. Jangle fallacies, on the other hand, involve assumptions of dissimilarity. Identical constructs are differently named (Marsh et al. 2019; Ponnock et al. 2020). If a jingle fallacy involves an ‘unthinking acceptance of verbal equality as proof of real equality’ (Thorndike 1904: 14), a jangle fallacy involves the assumption that verbal inequality is proof of actual inequality (Lawson and Robins 2021).

Jingle–jangle fallacies are rife in psychology. With a profusion of related constructs, jingle–jangle fallacies can arise when interest in one construct creates a blinkering effect, diverting attention from other potentially relevant conceptualizations. In the study of motivation, blinkeredness is a well-recognized problem. As Marsh et al. (2019: 332) have explained, ‘researchers tend to focus on their preferred measures, sometimes paying relatively little attention to testing how (or whether) they differ from other, apparently related constructs’. Self-efficacy is especially prone to jingle–jangle problems. With distinctions between self-efficacy and self-concept difficult to establish, jangle fallacies are a perennial concern (Marsh et al. 2019).

Jangle fallacies at the measurement level are not the only validity issue affecting L2MSS research. Jingle fallacy problems at the construct level also create problems. In an applied field such as L2 psychology, risks involving jingle–jangle fallacies are palpable. Enduring and in-depth engagement with mainstream theorizing is rare (Oga-Baldwin et al. 2019; Al-Hoorie et al. 2021). For self-based research, with its plethora of interrelated and overlapping constructs, developing an understanding of systematic conceptual distinctions can be extremely challenging (Peck 2004). With theoretically derived propositions requiring constant reevaluation, Al-Hoorie et al. (2024: 16) are right to point out that ‘more fundamental thinking is needed that revisits the validity of the ideal L2 self construct itself and the original eclectic theoretical base underlying it’.

3. Sibling constructs

The psychology of human behaviour is awash with constructs that capture ostensibly similar phenomena. Working in these conceptually murky waters, researchers need to ask probing questions:

[W]hat makes two constructs different enough to be considered distinct? What makes two constructs similar enough to be considered identical? What happens with constructs that fall into the gray area between distinct and identical? And, most important, what steps should researchers take to ensure that constructs coexisting in this gray area do not lead to theoretical and methodological confusion?

(Lawson and Robins 2021: 344)

In L2MSS research, these questions have received insufficient attention.

To avoid jingle-jangle fallacies when constructs have conceptually similar confines, and ‘involve a similar underlying trait or process’ (Lawson and Robins 2021: 346), relationships need to be theoretically established. In psychological research, definitions of constructs ‘are often vague and incomplete’ (Lawson and Robins 2021: 347). Reliance on verbal equivalence is filled with risk. For a pair of ostensibly similar constructs, it is necessary to establish whether they are related because both are facets of the same superordinate domain, or because one construct is a facet of the other (Lawson and Robins 2021).

For L2 self-guides (Dörnyei 2005, 2009) the relatedness of source constructs remains obscure. While convergences in the theorization of possible selves (Markus and Nurius 1986) and self-guides (Higgins 1987) are suitably discussed in the foundational scholarship (Dörnyei 2005, 2009), divergences have received little attention. In the absence of robust conceptualizations of divergent aspects, subsequent work has tended to gloss over potential differences. In L2MSS research, possible selves and self-guides have come to be regarded as ‘different manifestations of essentially the same underlying construct’ (Lawson and Robins 2021: 348).

When assumptions of equivalence are made, jingle fallacy problems can arise. The degree of similarity that a construct pair might share needs to be ascertained. The key question is whether constructs should be treated as *twins* (i.e. constructs that are conceptually identical), or *siblings* (constructs that may overlap, but which are conceptually distinct) (Lawson and Robins 2021).

At the construct level, establishing ‘sibling’ or ‘twin’ status can be accomplished in a two-step process (Lawson and Robins 2021). The first step involves ascertaining the nature of the relationship. Is each construct a facet of the same superordinate domain, or is one construct a facet of the other? The second step involves examining the nature of interrelations (Lawson and Robins 2021).

Step one. From a close reading of Dörnyei’s work, a superordinate relationship can be discerned. Unpacking the conceptualization of L2 self-guides (Dörnyei 2005, 2009, 2014, 2020), a *possible self* (Markus and Nurius) can be understood as a facet of a *self-guide* (Higgins 1987) (Table 1). Three conclusions can be drawn: (i) that possible selves are a type of self-guide, (ii) that the regulatory functions of possible selves can be explained by self-discrepancy theory, and (iii) that the constructs encompass similar processes of projection.

Step two: To establish the status of related constructs, a *theory map* can provide a means of disambiguation (Lawson and Robbins 2021). A theory map is a simplified version of a *theorized nomological network* (Cronbach and Meehl 1955). It provides an accessible and visually explicated representation of similarities and differences. A theory map illustrating relationships between the constructs from which L2 self-guides are derived is provided in Figure 1. As this graphic demonstrates, possible selves and self-guides are hardly twins. They may not even be the closest of siblings.

4. Disambiguation

Relationship to the self. Possible selves and self-guides differ in a fundamental respect. Possible selves are systematic and defining components of the self-concept. When situationally activated, possible selves ‘contribute to the fluidity and malleability of the self’ (Markus and Nurius 1986: 965). In contrast, self-guides (Higgins 1987) are separate from the self-concept. Self-guides form part of an interpretive framework through which the *actual self* (the person’s self-concept) is evaluated (Higgins 1987). A *self-guide* is aptly named. It guides behaviour (Higgins et al. 1986). It steers a person’s actions in directions where the *actual self* becomes closer to ideals and aspirations. A self-guide is a representation that shapes the self:

[There are] six basic types of self-state representations: actual/own, actual/other, ideal/own, ideal/other, ought/own, and ought/other. The first two self-state representations (particularly actual/own) constitute what is typically meant by a person’s self-concept (see Wylie 1972). The four remaining self-state representations are self-directive standards or acquired guides for being—in brief, self-guides.

(Higgins 1987: 321)

Table 1: The conceptual roots of the ideal and ought-to L2 selves

Dörnyei (2005)	The educational relevance of possible selves has been documented by a number of studies. They can act as 'academic self-guides', and in this respect I found the concept of one type of possible self, the <i>ideal self</i> , particularly useful. (p. 100)
Dörnyei (2009)	The two key components of Higgins's (1987; Higgins et al. 1985) self theory are the ideal self and the ought self. As we have seen above, Markus and Nurius (1986) also mention these concepts, but Higgins used them as precisely defined technical terms in his more general theory of motivation and self-regulation. (p. 13) ...the imagery component of future self-guides is a powerful motivational tool. Let us examine how this tool fits into a broader theory of the motivational function of the ideal and ought selves. In this respect the most coherent framework has been offered by Higgins's (1987, 1996) self-discrepancy theory ... (p. 19)
Dörnyei (2014)	Projected future selves have a strong motivational impact (cf. Markus & Nurius, 1987), and this motivational function was made explicit by Higgins (1987, 1998) self-discrepancy theory. /.../ In this sense, possible selves act as 'future self-guides', reflecting a dynamic, forward-pointing conception that can explain how someone is moved from the present towards the future. (pp. 7–8)
Dörnyei and Ryan (2015)	...possible selves incite and direct purposeful behavior, and the more vivid and elaborate the self-image is, the more motivationally effective it is expected to be. Regarding any academic implications, Higgins's (1987) self-discrepancy theory offered a particularly useful explanation of how possible selves regulate motivation. (p. 87)
Dörnyei (2020)	... following Markus and Nurius's (1986) original conception of possible selves (discussed earlier), both self-guides include a prominent self-image component, with the 'image' aspect taken literally and operationalized as mental imagery that the L2 learner has of him/herself projected in the future. (p. 123)

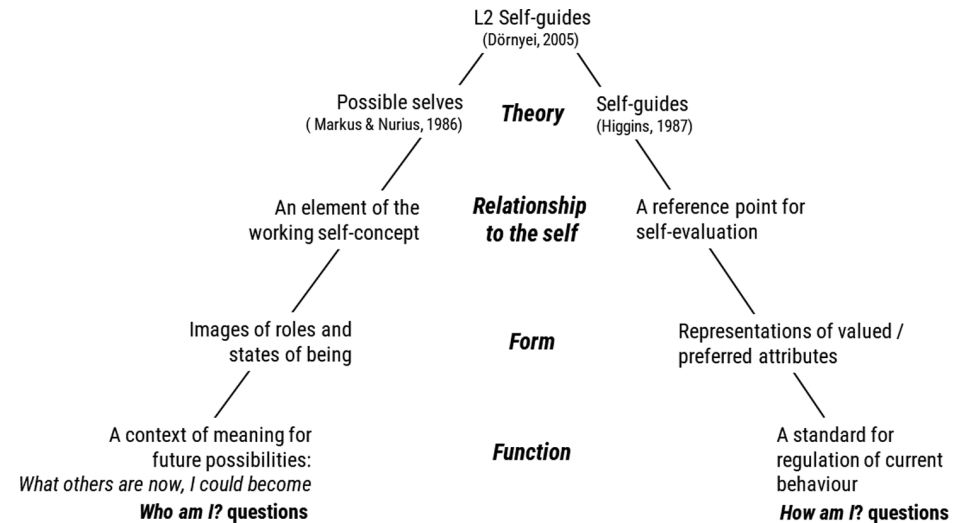


Figure 1: A theory map of the constructs from which L2 self-guides are derived.

Poorly appreciated in the original scholarship (Dörnyei 2005, 2009), this distinction has been a source of confusion in subsequent work. Ambiguity in terminology—for example, ‘future L2 selves’ ‘future self-guides’, ‘future L2 self-guides’, ‘L2 future self-guides’, ‘possible future self-guides’ and ‘possible L2 self-guides’—has resulted in a tendency ‘to introduce a new construct and suffix it with a ‘self’ (Al-Hoorie 2018: 738). Often, this has taken place without grasping the essence of each construct. While possible selves and self-guides can both be components of a self- or a self-regulatory system, possible selves constitute a part of the self (as elements of the working self-concept). Self-guides are external to the self. They provide a perspective on the self, and from which the self is appraised.

Form. Possible selves (Markus and Nurius 1986) and self-guides (Higgins 1987) were both developed to explain behaviour arising from incongruences in a person’s perceptions of current and desired characteristics. While in each case, a perception of circumstances that might pertain in the future is compared with a perception of actual (current) circumstances, the phenomenology of the representations differs. Possible selves are images of the self in future situations (Markus and Nurius 1986). Conjured in the imagination, and often with an orientation to longer-term futures, possible selves are ‘imagined roles and states of being’ (Markus and Nurius 1986: 954). In generating a possible self, it is ‘the inventive and constructive nature of the self’ that is implicated (Markus and Nurius 1986: 954). Possible selves provide images of the self in a different guise: ‘What others are now, I could become’ (Markus and Nurius 1986: 954).

A self-guide is a type of *standard* (Higgins et al. 1986). Standards are knowledge structures. Providing points of reference for self-evaluation, standards influence ‘social information processing and emotional-motivational states’ (Higgins 1990: 310). A self-guide is a representation of attributes that can be desired or preferred by the individual themselves, or which the individual believes are desired or preferred for them by psychologically significant others.

Fuzzy in the work conceptualizing ‘L2 self-guides’ (Dörnyei 2005, 2009), these distinctions have been poorly appreciated in subsequent research. A troubling consequence has been the tendency to operationalize the ideal L2 self as a *possible self* (Markus and Nurius 1986) and the ought-to L2 self as a *self-guide* (Higgins 1987). In the most widely used scale in L2MSS research (Taguchi et al. 2009), items measuring the ideal L2 self-reference visionary capacity and are formulated to capture the imaginal elements of a personal future (e.g. ‘I can imagine myself studying in a university where all my courses are taught in English’). In contrast, items measuring the ought-to L2 self target beliefs about desired/preferred attributes (e.g. ‘Studying English is important to me because an educated person is supposed to be able to speak English’). A similar incongruity can be found in work on regulatory focus, where L2 self-guides are bifurcated to reflect own and other standpoints (Papi et al. 2019). While ‘ideal own’ is operationalized with items that target the imagination (‘I can imagine a day when I use English effectively to communicate with people from all around the world’), ‘ideal other’ is measured using items that target beliefs (‘If I master the English language, the people who are important in my life will be proud’) (Papi and Khajavy 2021).

Function. Possible selves are perceptions of the self in future situations (Markus and Nurius 1986). Possible selves develop in contexts that are personally meaningful, and in situations where behaviour is intentional. They create contexts of possibility where speculations about potentiality are prompted, and where the person’s future is assessed. Projecting into a personal future, a person ‘may vividly elaborate hoped-for images of himself of herself as “being a famous musician,” “becoming a good psychologist,” or “having a happy family”’ (Markus and Cross 1990: 595). When activated, a possible self-invokes ‘Who am I ...’ questions.

As a type of standard, self-guides are knowledge structures that encompass representations of attributes that are desired, valued, or preferred (Higgins et al. 1986; Higgins 1987). Self-guides provide points of reference in relation to which the current self is evaluated. This form of self-evaluation differs from that prompted by speculation about a personal future. When a self-guide is activated, focus is on the present. ‘How am I’ questions are invoked.

In L2 motivation research, involvement of the self has been uncontested. Irrespective of a model’s ontological and epistemological underpinnings, motivational processes ‘consistently evoke

the role of identity' (Al-Hoorie and Hiver 2020: 2). This is particularly true of the L2MSS, which was developed at a time when L2 motivation was being 'reconceptualized and retheorized in the context of contemporary notions of self and identity' (Ushioda and Dörnyei 2009: 1). However, a focus on 'self and identity' has deflected attention away from self-appraisal processes, and the function of self-guides as self-evaluative standards (Higgins et al. 1986). If the aim of research is to understand L2 learners' motivation and regulatory processes, a focus on 'How am I'. questions would seem more profitable than a continued focus on 'Who am I'. questions.

5. Benefits

Just as there are risks in becoming entrenched in the intricacies of measurement validity, striving for nuance in the disentanglement of sibling constructs can also be unproductive. As one of the reviewers of this article pointed out, a cynical assessment might be that these arguments represent a classic case of Sayre's law; that the battles are fierce because the stakes are low. To avoid such embroilments, a pragmatic view of construct validity can be useful (Haig 2023). This is also emphasized by Al-Hoorie et al. (2024), who make clear that 'the usefulness of the construct for broader theoretical understanding' is also a validity criterion (17). Two benefits of disambiguation are apparent. The first concerns the conceptualization of context influences. The second involves a more discriminating use of possible selves.

So far, L2 motivation has been investigated using models where social influences are conceptualized as external to the self (Gardner 1985; Dörnyei 2009; Noels et al. 2019). However, when applications of Higgins's (1990) theorizing are extended to include a full range of social standards, we are provided with a framework where social influences can be operationalized as learner-internal constructs. Because they function as representations of preferences and expectations attributable to significant others, social groups, and context participants, self-guides and other social standards can enable the development of 'context-in-person' conceptualizations of L2 motivation (Henry and Liu 2023, 2024).

Given the validity problems associated with L2MSS research, Al-Hoorie et al. (2024: 18) suggest that 'channeling efforts and resources into self-determination theory ... might present more promising research avenues'. They may well be right. However, addressing jingle fallacy problems at the construct level can also have implications for SDT. As Noels et al. (2019: 108) have made clear, 'SDT does not consider how idealized- or imagined-self images are related to motivation as articulated by notions of the ideal L2 self'. With better understanding of the functions of self-guides, and an appreciation of the array of social standards that can influence regulation, connections with SDT become apparent. Both SDT and Higgins's (1990) conceptualization of social standards encompass the theory of *internalization*, the manner in which regulation by external events can be transformed into regulation by internal events (Hartmann and Lowenstein: 1962; Schafer 1968). Like the motivational orientations of SDT, self-guides can be differentiated into *introjected*, *identified*, and *independent* categories. Guides that were once introjected can become identified as one's own (Moretti and Higgins 1999).

In addition to self-guides, other standards can play a role in processes where more self-determined forms of motivation can evolve. To move towards more mature forms of self-regulation, *socially communicated structure* is needed. As Connell and Ryan (1984: 72) explain, this constitutes 'a set of information regarding (a) what the societal expectations are and how to meet them and (b) what the consequences of meeting and not meeting these expectations are'. In a context-in-person conceptualization, social standards provide this information (Henry and Liu 2023, 2024). So far, L2 motivation research has focused on only some of the explanations that SDT has to offer (Al-Hoorie et al., 2022). By addressing the jingle fallacy inherent in the 'L2 self-guide' construct, and by clarifying the respective functions of possible selves (Markus and Nurius 1986), and self-guides and associated social standards (Higgins et al. 1986), opportunities to further unlock the potential of SDT arise.

In situations where identity counts, and where research is directed to motivation that arises from identity concerns, disambiguation can also bring advantages. MacIntyre (2022) has

questioned the value of a model of motivation constructed around the self. As he has argued, 'the self applies best to those situations in which the past, present, and future all are integrated and highly relevant within consciousness, situations in which one's view of themselves as a continuous entity matters' (MacIntyre 2022: 89).

While the self can play an important role in understanding the motivation of committed L2 learners, a preoccupation with identity should not be assumed to be typical for all language learners (Thomas et al. 2021). Operating as a standalone construct unencumbered by a shadowing ought self, and as a constituent in integrated models that encompass personal goals and autobiographical knowledge (Hiver et al. 2020; Henry 2023), possible selves can be profitably used in situations where L2 identities *do matter*, or where they have the potential to be significant.

6. Conclusion

Poorly articulated theories are one of the main causes of the validation and replicability crises in psychology. In the 'the jingle-jangle jungle of contemporary identity concepts' (Peck 2004: 50) 'problems at the construct level tend to create problems at the measurement level' (Lawson and Robins 2021: 344). Attempts at replication can fail because the model or mechanism on which a study is premised is poorly theorized. Quality will not always be synonymous with methodological rigor (Plonsky 2024).

Al-Hoorie et al. (2024) have made a compelling case for a validation crisis in L2MSS research. While the crisis might be manifested in jangle fallacy problems at the measurement level, its roots lie at the construct level. A 'jingle fallacy can cause the scientifically uncaring to believe they are talking of the same phenomenon when indeed they are not' (Block 2000: 156). In L2MSS research, the assumption of equivalence has complicated empirical work. It has constrained differentiated use of the constructs from which 'L2 self-guides' were devised. To unlock the distinctive value of possible selves (Markus and Nurius 1986) and self-guides and associated standards (Higgins 1987), disentanglement is necessary. By splitting the siblings, future work can benefit from both methodological and theoretical rigor.

Notes on Contributors

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Acknowledgements

This research was conducted within the research programme Transdisciplinary Approaches to Learning, Acquisition, Multilingualism (TEAM) funded by Riksbankens Jubileumsfond, grant number M23-0052. We gratefully acknowledge this support.

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