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# Indicators of Event Integration in Repertory Grids and Ladders

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## ABSTRACT

Personal Construct Psychology contends that construing events in an integrated way is conducive to better psychological functioning. However, there is a dearth of criterion validity research investigating whether PCP measures of integration are indeed associated to psychological adjustment. An online survey was designed to investigate the construing of the recent COVID-19 pandemic. The survey consisted of repertory grids, ladders and external measures of event integration and psychological wellbeing. 101 responses by UK university students were collected. The aims were to examine the association of grid intensity, number of ladder rungs and construct subjective importance to the mentioned external measures. Two grid and ladder measures were associated with positive outcomes in event integration and psychological wellbeing: overall grid construct intensity and number of ladder rungs. The data suggested that laddering a person's less important constructs, as opposed to their more important constructs, might be an important process in fostering a more integrated construing of events. Limitations were related to data-quality issues arising from the online methodology, as well as from probable statistical underpowering.

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## KEYWORDS

Repertory grid; ladder; integration; indicator

According to Personal Construct Psychology (PCP; Kelly, 1955), an integrated construct system is one that can anticipate events in a way that is functional and coherent for the individual (Adams-Webber, 1979; Gallifa & Botella, 2000; Landfield, 1977). A highly integrated construct system thus implies that the person can make good sense of the world around them and is able to move in an essentially meaningful direction through their choices. It can be seen as the equivalent process to what is usually referred to as “sense-making” in the wider meaning literature (Holland et al., 2010; Park, 2010).

One assumption usually made within PCP is that construing events in this integrated way is positive for psychological wellbeing and adjustment. Equally, construct system integration is assumed to be indicated by several structural measures derived from various tools, e.g., repertory grids (Fransella et al., 2004), even though there is no robust convergent or concurrent validity literature evidencing this (Kovářová & Filip,

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2015). In other words, the validity of these PCP-derived indicators is not firmly established using external criteria.

In this paper, we aim to contribute to this clarification by examining the association of several PCP structural measures theorized to be indicators of integration with questionnaires of psychological wellbeing and event integration.

### ***PCP Integration Measures and terminological clarifications***

A full review of the wealth of PCP methods proposed as ways of estimating construct integration is beyond the scope of this article. Thus, three of the most important will be examined here: repertory grid structural measures, laddering technique, and construct subjective importance.

First, repertory grids (Fransella et al., 2004) consist of a series of elements, placed on the grid's columns, representing a determined domain of construing. This is frequently the individual's personal and social world, which includes aspects of the self as well as significant others. Following, the elements are rated on a set of bi-polar constructs (placed on the grid's rows), and the ratings form a matrix of values from which different measures of construct system structure can be calculated, e.g., Percentage of Variance Accounted by the First Factor, Intensity, Bieri's measure, etc, all of which are moderately or highly intercorrelated (Herrán-Alonso et al., 2022; Kovářová & Filip, 2015).

There is a complex debate regarding whether these measures represent construct differentiation or construct integration (Herrán-Alonso et al., 2022). Differentiation refers to a general process of construing characterized by distinct "... dimensions of judgement used by a person" (Tripodi & Bieri, 1964, p. 122). Integration is sometimes defined in terms of construction in hierarchy where "conceptions stand in superordinate and subordinate relationships to one another" (Landfield & Cannell, 1988, p. 77), and where the superordinate constructs provide the connections that integrate the system. Other authors (e.g., Gallifa & Botella, 2000) appear to define integration as the opposite process to differentiation: while the latter is the process that construes differences amongst the events of the world, integration is the process that simply construes their similarities, without any need of or reference to construction in hierarchy. These differing definitions give raise to distinct views around whether differentiation and integration constitute two orthogonal processes (that should therefore have their own independent measures each) as with the first definition, or whether there may be a single integration—differentiation dimension in construing, as with the second definition. For a full discussion of this topic, please see Kovářová and Filip (2015).

This study will align with the second of these views. It will take the position that repertory grid structural measures only offer some indication of the actual closeness-separateness of constructs in the grid, and that hierarchical relationships amongst constructs can probably be inferred only by combining and formulating different aspects of the individual's way of seeing the world, e.g., structural measures alongside qualitative information such as construct content (Winter & Procter, 2014). Therefore, for the purposes of this article, the single integration-differentiation dimension conceptualization will be followed, with integration being equivalent to low differentiation and *vice versa*. For simplicity, only integration will be alluded to.

The second of the methods related to the study of integration is laddering (Hinkle, 1965). This is a way of eliciting increasingly superordinate constructs, i.e., those that subsume (and thus provide integration for) a great number of other constructs (Kelly, 1955). Laddering is a recursive interviewing technique in which the interviewee is asked about the reason why they prefer a particular pole of a bipolar construct to describe themselves. The reason given becomes a new bi-polar construct generating a new rung, and this process is reiterated until the individual feels unable to generate new constructs (Procter & Winter, 2020). Despite some critical voices (e.g., Bell, 2014), laddering's validity as a way of accessing superordinate content is generally accepted amongst authors (Procter & Winter, 2020). The validation study conducted by Neimeyer et al. (2001) proposed several quantitative aspects of ladders, e.g., number of rungs, level of content abstraction, response time, etc. that can potentially be used as estimators of integration.

Finally, the subjective importance given to personal constructs by individuals has also been considered in the literature as a method for estimating construct integration. Research has indicated that constructs with high subjective importance tend to have more connections or implications with other constructs (Hinkle, 1965; Mcdonagh & Adams-Webber, 1987), and can thus be used as an indication of higher integration.

### ***The COVID-19 pandemic as a distressing event***

In order to address this study's aims, it became necessary to identify an event that had had a significant impact on a large part of the population. Quantitative and qualitative studies on the recent COVID-19 pandemic appear to converge in the idea that this was an extraordinary and, for many, distressing event that populations across the world had to make sense of, and thus integrate in their own worldviews.

In terms of psychological distress, the COVID-19 pandemic has reportedly had a negative impact on the mental health of populations across many studied countries. In an early meta-analysis of international general populations, Xiong et al. (2020) found relatively high rates of post-traumatic stress disorder (PTSD), depression and anxiety in the pandemic's early phases. Risk factors for these difficulties were found to be the female gender, younger people and students. Similar findings were reported in studies specifically looking at the latter demographic (Catling et al., 2022; Chen & Lucock, 2022). However, none of these studies investigated the possible causal role of the pandemic on the elevated distress. Interestingly, later meta-analyses comparing pre-pandemic to during pandemic levels of psychological distress on international general populations have found minor to no differences between these two phases (Lok et al., 2023; Sun et al., 2023), and thus further research into the pandemic's contribution to psychological distress is necessary to clarify this complex picture.

Qualitative studies from a PCP lens found threat, anxiety and hostility as prevalent themes in international samples, amongst others (Cipolletta et al., 2022; Tomaino et al., 2021; Winter et al., 2023, 2024). Experiencing threat as directed to personal life was more strongly associated to peritraumatic distress symptoms than other forms of construing threat (Cipolletta et al., 2022). Across international samples, the breakup of relationships (sometimes arising from mutual contempt due to conflicting views of the

event) and the longing for reconnection was the most recurrent theme (Todorova et al., 2021; Winter et al., 2023).

In summary, and despite some complexities and limitations to the evidence, the studies briefly cited above seem to indicate that the COVID-19 pandemic was a stressful event that individuals across the world had to make sense of and integrate in their own worldviews. This provided an opportunity to study the structural aspects of individuals' construing of this event, and explore their association with external criteria as explained in this introduction.

## Objectives and hypotheses

The aims were to examine the association of grid intensity, number of ladder rungs and construct subjective importance to external measures of event integration and psychological wellbeing. Three hypotheses were formulated:

**Hypothesis 1:** Construct integration will correlate with positive scores in psychological wellbeing and integration of stressful events. This is due to construct integration implying more connections between constructs, resulting in better anticipatory capacity of the construct system and thus better psychological adjustment.

**Hypothesis 2:** The number of ladder rungs will be positively associated to outcomes in the external measures in a direction of increased wellbeing. The rationale is that people who produce more rungs during the completion of a ladder will have a greater awareness of their superordinate constructs, resulting in more integrated construing, in turn leading to better psychological adjustment.

**Hypothesis 3:** The participants' most important constructs will have higher intensity values and generate a smaller number of rungs when ladderized than their least important constructs. This is because constructs that feel important for individuals are more superordinate, therefore have more linkages to other constructs, in turn requiring less rungs to reach the top of the ladder.

## Method

### Sample

After approval by the University of Hertfordshire's Ethics Committee (protocol number LMS/PGR/UH/04992), a sample of  $N=101$  students participated in an online survey that included a repertory grid, ladders and a series of external standard questionnaires. The data were collected between July and December 2022 as part of a larger project (Herrán-Alonso, 2023). Participants were offered compensation for their time and effort in the form of university credits (for students of psychology and social work) and Amazon vouchers (for the remaining students).

The sample was 64% female and 31% male, with 5% identifying as neither. Participants' ages ranged 18 to 53 years (mean = 24.35), with 69.70% of the sample between the ages of 18 and 24 years. 62% of the participants were undergraduate students, with Master's Degree and Doctoral students representing 34% and 4%

respectively. The most frequent ethnicity group was white participants (44.55%), followed by Asian (29.70%) and black (12.87%) participants. In terms of religion, those declaring no religion made 29.70% of the sample, while Christians and Muslims represented 28.71% and 26.73% respectively.

## Measures

### Repertory grid

As the grid's elements needed to be meaningful for the target population during the COVID-19 pandemic, a consultation panel of seven students was created. The panel members were recruited *via* snowball sampling from acquaintances of the principal investigator. The resulting 10 grid elements were related to people's social roles during the said event, following similar grids used in previous work with pandemics (Winter, 2018). The dyadic comparisons method (Landfield, 1971) was used for the elicitation of constructs. The order in which the comparisons were presented was standardized to control for elicitation effects (Feixas et al., 2004; Neimeyer et al., 2005). Following this protocol, 10 constructs were generated by each participant (see Figure 1 for details). Constructs were rated using a seven-point Likert scale.

The following measures were extracted from the repertory grids:

Construct Intensity (Bannister, 1960). The intensity measure is based on the bivariate correlations between constructs and hence is usually seen as an indicator of the interconnectiveness amongst these (Herrán-Alonso et al., 2022; Kovářová & Filip, 2015). As discussed earlier, in this study high intensity indicates high construct integration (Feixas et al., 1992; Gallifa & Botella, 2000; Garcia-Martinez et al., 2009).

The R-based OpenRepGrid package (Heckmann, 2016) was used to calculate intensity scores, by adding up the squared Pearson correlations ( $R^2$ ) of each construct with all other constructs in the grid, and dividing this by the total number of constructs minus one. A Total Intensity score was calculated by using the mean intensity of all constructs in the grid.

Construct Subjective Importance. Participants ranked the 10 grid constructs according to their perceived importance.

### Laddering technique

Participants were guided to ladder the most and least important of their constructs, as described before. The number of rungs or ladder levels generated by participants was the measure of interest here. The presentation of the two ladders was randomized to control for order effects, i.e., some participants laddered their most important construct first, while others commenced with their least important construct. In order to limit the burden of the survey administration on participants, it was decided that ladders would be limited to a maximum of six rungs in this study, based on the authors' clinical and research experience with the technique.

### External measures

*The Integration of Stressful Life Experiences Scale (ISLES)*. The ISLES (Holland et al., 2010) is made of 16 items with 5-point scales that estimate the extent to which a

	Element 1 SELF now	Element 2 SELF before the pandemic	Element 3 SELF at worst moment during the pandemic	Element 4 IDEAL SELF	Element 5 A PERSON WHO THINKS EVERYONE SHOULD BE VACCINATED	Element 6 A PERSON WHO ALWAYS STANDS WITH THE OFFICIAL GOVERNMENT MESSAGES	Element 7 A PERSON WHO HAS MIXED FEELINGS ABOUT MOST ISSUES RELATED TO THE PANDEMIC	Element 8 A PERSON WHO THINKS PANDEMIC RESTRICTIONS WERE AUTHORITARIAN	Element 9 A PERSON WHO THINKS THE PANDEMIC IS PLANNED	Element 10 CORONAVIRUS AS IF IT WERE A PERSON
<b>COMPARISONS</b>										
1 SELF now	Construct 1	SELF before the pandemic								
2 SELF now	Construct 2	SELF at worst moment during the pandemic								
3 SELF now	Construct 3	A PERSON WHO THINKS EVERYONE SHOULD BE VACCINATED								
4 SELF now	Construct 4	A PERSON WHO ALWAYS STANDS WITH THE OFFICIAL GOVERNMENT MESSAGES								
5 SELF now	Construct 5	A PERSON WHO IS UNSURE OR HAS MIXED FEELINGS ABOUT MOST ISSUES RELATED TO								
6 SELF now	Construct 6	A PERSON WHO THINKS PANDEMIC RESTRICTIONS WERE AUTHORITARIAN								
7 SELF now	Construct 7	A PERSON WHO THINKS THE PANDEMIC IS PLANNED								
8 SELF now	Construct 8	SELF IN A POSSIBLE FUTURE PANDEMIC								
9 SELF now	Construct 9	A PERSON WHO WAS VERY BADLY AFFECTED BY THE PANDEMIC								
10 SELF now	Construct 10	CORONAVIRUS AS IF IT WERE A PERSON								

Figure 1. Dyadic comparisons and final repertory grid completed by participants.

stressful life event has been integrated in the individual's experience of themselves and the world, resulting in a coherent and purposeful view of it. The ISLES consists of two subscales: Footing in the World and Comprehensibility. Internal consistency has been shown to be adequate (Cronbach  $\alpha = .80-.94$ ). Test-retest values have been moderate ( $r = .48-.59$ ), although according to the authors this is an expected result, due to the gradual nature of the process of integration. Higher integration of events is indicated by higher scores. No cutoff or normative data are available for this instrument, although a cutoff score has recently been reported for its short version (ISLES-SF; Lee et al., 2025).

Internal reliability scores in the present study were  $\alpha = .89$  for the Footing in the World subscale,  $\alpha = .75$  for the Comprehensibility subscale, and  $\alpha = .91$  for the Total ISLES score. In order to examine the ISLES' factorial structure, an Exploratory Factor Analysis (EFA) using maximum likelihood extraction and promax rotation was performed. Contrary to the original authors' finding (Holland et al., 2010), a Parallel Analysis (PA; Horn, 1965) advised that only one factor from the EFA should be retained, thus only the Total ISLES score was used in this study. Note that this is in accordance with recent research indicating the scale is robust both when used as a unitary measure or as a bifactorial measure (Lee et al., 2025).

The ISLES' user instructions were slightly modified to refer specifically to the COVID-19 pandemic i.e., participants were asked to complete the items "... with regard to the most stressful life event [they] experienced during the COVID-19 pandemic."

*The Clinical Outcomes in Routine Evaluation 10 (CORE-10; Barkham et al., 2013).* The CORE-10 is a 10-item evaluation of general psychological wellbeing and clinical state that uses a 5-point scale. Its internal consistency has been reported at  $\alpha = .90$  (Barkham et al., 2013). Higher scores indicate higher psychological distress. The cutoff scores for significant general distress and clinical depression are 11 and 13 respectively.

The CORE-10's Cronbach's alpha value in this study was  $\alpha = .87$ . Consistent with the CORE-10's reported factorial structure, the PA recommended a one factor solution.

*The Coronavirus Anxiety Scale (CAS; Lee, 2020).* This is a 5-item screening tool to assess dysfunctional COVID-specific anxiety using a 5-point scale. Its internal reliability has been reported at  $\alpha = .93$  (Lee, 2020). Clinically significant COVID anxiety is suggested by a score equal or greater than nine.

For the current study, the CAS's internal consistency was  $\alpha = .88$ . The EFA and PA resulted in a one-factor solution.

## **Procedure**

First, participants were guided to complete the repertory grid, and began by assigning people known to them to the roles described in the elements (Figure 1). Next, they completed the element comparisons to generate their personal constructs, rated each of the elements on the constructs, and ranked these by subjective importance. In the following step, they proceeded to ladder their most and least important constructs. Finally, the participants completed the ISLES, CORE-10, and CAS.

## Data analysis

### Grid pre-processing

An alignment of the direction of construct scores is usually recommended before most repertory grid structural measures can be calculated (for an in-depth explanation of this see Bell, 2010; Fransella et al., 2004; Herrán-Alonso et al., 2022; Mackay, 1992). For this study, the construct scores were re-aligned in reference to the ideal self (Mackay, 1992) using the OpenRepGrid programme (Heckmann, 2016).

### Normality checks and statistical methods used

SPSS 24 was used to analyze the data. All variables at interval level were normally distributed, except for the number of ladder rungs and CAS scores. Parametric and non-parametric techniques were used accordingly. Significance testing was one-tailed as the study's hypotheses were directional.

## Results

### Descriptive statistics

Table 1 reports means and standard deviations for the study's measures, as well as the proportion of participants with clinically significant scores where cutoffs are available.

### Correlations between external measures

In the present study, there were significant, but not high, correlations between scores on the ISLES and those on the CORE-10 ( $r = -0.50$ ,  $p < 0.01$ ) and CAS ( $\tau = -0.22$ ,  $p < 0.01$ ) and between CORE and CAS scores ( $\tau = 0.26$ ,  $p < 0.01$ ).

### Hypothesis 1

The overall construct intensity was positively associated with the scores on the ISLES ( $r(79) = .260$ ,  $p = .009$  one-tailed). No significant correlations were found between

**Table 1.** Descriptive statistics of the study's measures.

	Mean (max)	Standard Deviation	% sample meeting or exceeding clinical cutoff
Overall construct intensity	.33 (1)	.16	
Most important construct intensity	.32 (1)	.18	
Least important construct intensity	.29 (1)	.17	
Overall no. of ladder rungs	4.19 (6)	2.25	
No. rungs most important construct	4.33 (6)	2.11	
No. rungs least important construct	4.05 (6)	2.4	
ISLES total	56.35 (80)	12.21	n/a
Core-10 total	13.98 (50)	13.72	62 %
CAS total	1.39 (25)	3.01	6 %

Note: () = maximum possible score for each measure reported between brackets.

**Table 2.** Pearson correlations between construct intensity and psychological wellbeing measures.

	Intensity of all constructs
ISLES total	.260*
Core total	-.166
CAS total ( $\rho$ )	.078

Note: \* =  $p < .05$  one-tailed;  $\rho$ : Spearman correlation was used for this measure.

**Table 3.** Spearman correlations between number of ladder rungs and meaning / psychological wellbeing measures.

	No. of ladder rungs – Most important construct	No. of ladder rungs – Least important construct
ISLES total	.066	.189*
Core total	-.182*	-.206*
CAS total	.084	.077

Note: \* =  $p < .05$  one-tailed.

intensity and the remaining external criteria, i.e., CORE and CAS (Table 2). Thus, the hypothesis that higher intensity would be related to improved outcomes in psychological wellbeing and event integration measures was partially supported.

### Hypothesis 2

The number of rungs in both ladders was negatively associated with the CORE-10 ( $\rho = -0.182$ ,  $p = .035$  one-tailed, for the most important construct ladder;  $\rho = -0.206$ ,  $p = .020$  one-tailed, for the least important construct ladder). The ladder originating on the least important construct was additionally related to the ISLES ( $\rho = .189$ ,  $p = .030$  one-tailed). The directions of these associations were in accordance with the hypothesis that the number of ladder rungs would be related to positive outcomes in psychological wellbeing and event integration measures (Table 3). No associations were found for the CAS ( $p > .05$ ).

### Hypothesis 3

A Wilcoxon Signed Rank Test resulted in no differences in the number of rungs ( $p > .05$  one-tailed) between the most important construct ladder ( $\bar{x} = 4.33$ ,  $SD = 2.11$ ) and the least important construct ladder ( $\bar{x} = 4.05$ ,  $SD = 2.40$ ). Therefore, this hypothesis did not obtain support. Similarly, a t-test resulted in no differences ( $t(81) = 1.655$ ,  $p = .051$  one-tailed) between the mean intensity of the most important construct ( $\bar{x} = .326$ ,  $SD = .180$ ) and the same variable in the least important construct ( $\bar{x} = .295$ ,  $SD = .174$ ). Hence, the conjectures around construct subjective importance were not supported by the data.

## Discussion

The COVID-19 pandemic and psychological distress. The first finding to be highlighted is the elevated proportion of students (62%) who report clinically significant general distress as seen in Table 1 (the percentage meeting the higher cutoff for depression was 51%). This is in line with previous literature indicating that anxiety and depression

have been elevated amongst young people in industrialized nations for the last decade approximately, i.e., since before the pandemic (Bor et al., 2014; Twenge et al., 2019). Interestingly, COVID-specific anxiety in the present study was very low (6%), suggesting the pandemic may not have been a significant contributor to the general distress reported *via* the CORE-10. This would be in line with meta-analytic work previously mentioned that found minimal pandemic-specific effects on levels of anxiety and depression (Lok et al., 2023; Sun et al., 2023), as well as in line with studies that have identified lifestyle, academic, financial and social pressures (including social media) as most likely contributors to the current mental health crisis amongst young people (Mofatteh, 2021).

### **Hypothesis 1**

The first hypothesis proposed construct integration (as measured by intensity) would be positively related to measures of psychological wellbeing and event integration. The study's results showed a small association between the overall construct intensity and the ISLES, meaning that higher construct integration correlated with better event integration in terms of the person's worst pandemic event. However, a similar result was expected for the CORE-10 and CAS, which was not found. This might have been due to lack of statistical power, owing to the study's relatively small sample of  $N=101$ . In support of this contention, a study by Herrán-Alonso et al. (n.d.), using a larger sample of  $N=898$  Spanish adults showed overall grid intensity to be weakly but consistently related ( $r \approx .1$ ) to a wide range of psychological wellbeing measures in the hypothesized direction. When taken as a whole, these results appear to illustrate a small effect for increased construct interrelatedness (i.e., intensity) being associated to better psychological adjustment. It should be acknowledged that the relationship between intensity of construct relationships and psychological wellbeing may not be linear but rather of an inverted-U shape, with both extremely low and extremely high intensity being associated with low wellbeing. If this were the case, correlations would not be appropriate for the exploration of relationships between intensity and the criterion measures.

As previously indicated, there are also alternative views about repertory grid-based indices of construct integration. For example, Bell (2004) has questioned the utility of the intensity measure, providing evidence that the number of factors derived from the grid may be a more informative index of the structure of the construct system.

### **Hypothesis 2**

The second hypothesis stated that the number of ladder rungs would be positively related to outcomes in the psychological wellbeing and event integration measures. Not all the associations in Table 3 turned out to be significant, which can be understood as partial support for the hypothesis. Only the ladder originating in the least important construct significantly correlated with event integration (i.e., ISLES). Although this was a correlational analysis and causation cannot be inferred, it could be a suggestion that completing a ladder that originated in a less important construct may be

more effective in promoting construct integration than laddering from a construct perceived as highly important.

One important limitation to these results was the fact that the number of ladder rungs was limited to six in the survey, and that most participants exhausted this allowance which, presumably, would have prevented many of them from reaching the “top” of their ladders. In consequence, there was reduced variation in the number of rungs, which may have been a reason for failing to detect further effects.

### ***Hypothesis 3***

The last hypothesis, which proposed that the participants’ most important constructs would have higher intensity and elicit a smaller number of rungs upon laddering than the least important constructs, was not supported by the results. Nevertheless, this finding may have been due to the methodological problem pointed out above, i.e., limiting the number of rungs to six in the online survey.

One problem in this part of the study may have been the use of a ranking scale by participants as the way of measuring construct subjective importance. If an alternative Likert scale had been used for the same purpose, results may have been different, given that such a scale would have allowed the plausible co-existence in the grid of equally important constructs, something that the ranking scale ruled out.

### ***Limitations and recommendations for future studies***

Although the study provided only limited support for the hypotheses, and none for that concerning the subjective importance of constructs to participants, it would be premature to derive theoretical implications from the results in view of the various design weaknesses and the consequent need for further research. The study was relatively underpowered owing to its small sample size ( $N=101$ ), and limited in scope given the narrow population (UK university students), which challenges the generalizability of the results. Another limitation arises from the choice to limit ladder rungs to six. Although this sought to control for participant fatigue, particularly taking into account the online nature of the study, it was solely based on the authors’ clinical experience with laddering, and it limited the effects that could be detected by the study as explained in the discussion of hypothesis 2 above.

Several aspects of the online methodology constituted possible design weaknesses which may have affected the results. First, online data collection has been documented to be influenced by higher participant distraction and resulting unreliability of responses (Thomas & Clifford, 2017), an issue that may have affected the data collection to some extent. Secondly, despite online laddering technique being a feasible and valid method (Russell et al., 2004), the gold standard in laddering technique is face to face administration, something that was not possible in the current study. According to Russell et al. (2004), face to face administration allows for better navigation of the habitual difficulties with ladders, e.g., superficial answers or “weaving around” when eliciting further constructs as described by Butt (1995). Consequently, future studies using online laddering technique should ideally use a program that guides participants to complete as many rungs as they feel they need, allowing them to stop only when they truly feel

they have reached their personal ladder top. Otherwise, face to face laddering should be used. Finally, future studies aiming to investigate construct subjective importance should assess this variable using Likert scales and avoid relying on ranking scales, as the latter may be artificially excluding the presence of equally important constructs within the same grid, limiting the conclusions that can be extracted from the data.

## Conclusions

Construct integration (understood as relatedness and operationalized with Bannister's intensity measure) as well as number of ladder rungs showed a small association to better integration of stressful events and better psychological wellbeing. These findings were consistent with hypotheses derived from Personal Construct Theory (Kelly, 1955). Upcoming literature with an independent and larger sample confirms this trend (Herrán-Alonso et al., n.d.).

However, the hypotheses generated for construct subjective importance (i.e., that it would be related to construct integration and number of ladder rungs) were not supported by the data. This may have been due to limitations of the online methodology used. Some of the results suggested that there could be a role for specifically laddering a person's less important constructs, as it may promote increased integration of events.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

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