A New Methodology for Developing A Self-Report Psychodiversity Questionnaire: Update and Future Directions For A Work in Progress

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A novel self-report methodology for the construction of a multidimensional questionnaire measure of psychodiversity is described and preliminary findings from three exploratory studies examining construct validity in relation to indices of well-being are discussed. Arising from these empirical endeavours, the notion of metamotivational state specific psychodiversity is proposed. The need for additional item generation for the combined alloic-autic and mastery-sympathy pairs is acknowledged. Suggestions are made for further research developing and using the resultant measure both within and beyond Reversal Theory.

Keywords: Reversal Theory, psychodiversity

Introduction

In Reversal Theory, psychodiversity is the extent to which an individual switches or *reverses* between metamotivational states depending on the influence of either frustration, satiation or externally contingent factors (Apter, 1989). The essence of psychodiversity within Reversal Theory is the notion that the experience and behavior of any individual is inconsistent across different situations and that this inconsistency can be understood and predicted within a structural phenomenological framework (Apter, 2001). This notion aligns with Ashby's (1956) Law of Requisite Variety which holds that the total number of states within a control system must exceed or match the number of states to be controlled.

Although research regarding the impact of psychodiversity is currently limited, it has been proposed that psychodiversity should covary with better task performance in occupational contexts (Apter & Carter, 2000) and that researching psychological well-being in clinical settings would benefit from such a focus (Finfgeld et al., 2003; Svebek & Apter, 2014). Moreover, psychodiversity overlaps with similar theoretical constructs elsewhere in psychology, such as psychological flexibility and the ability to reconfigure and adapt mental processes and responses to varying situational needs (Kashdan & Rottenberg, 2010). Research on flexibility

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has reported that it has a positive influence on psychological functioning (Kashdan & Rottenberg, 2010); improving self-efficacy, life satisfaction, and reducing symptoms of psychological illness (Biron & Van Veldhoven, 2012; Bonanno & Burton, 2013; Hardy & Segerstrom, 2017); as well as being associated with positive familial and romantic relationship outcomes (Daks & Rogge, 2020). So, evidence exists elsewhere in psychology that inconsistency can be adaptive.

The existence of cross-situational inconsistency (Ajzen, 2005) challenges the prevalent assertion in personality research that all individuals possess a set of stable and unchanging *traits*. It highlights the role of social and environmental contextual factors in orchestrating behavior and cognition, something which is often overlooked (Berry & Frederickson, 2015). Arguably, to improve well-being, it is worthwhile for researchers to examine situational effects on transient decision-making and state-related processes (Diener, 2009) in order to expand current understanding of intra-individual inconsistency. As such, it is essential, as a first step, to be able to measure psychodiversity reliably and validly by being able to assess differences between people in the degree to which they experience situation-to-situation changes and reversals of psychological states and to evaluate such intra-individual inconsistency (Desselles et al., 2014).

This article maps out the progress that has been made by previous exploratory studies that have aimed to produce and operationalize a psychometrically valid and reliable psychodiversity measurement tool.

Developing a novel questionnaire method – measurement principles

To date, operationalizing the construct of psychodiversity across all eight metamotivational states in Reversal Theory has proved challenging. What we are reporting here in-

Table 1
Response frequencies for two example items from 101 respondents (Alfonso & McDermott, 2020)

Item	Emotion response term	Response frequency	%	Emotion response term	Response frequency	%
1	Accepting	17	16.8	Argumentative	84	83.2
2	Compliant	48	47.5	Defiant	53	52.5

tends to address this challenge through the construction of a psychometrically novel and innovative item pool. The item stems consist of various situations about which respondents are asked to stipulate which of two emotions they would be most likely to experience if they found themselves in such a context. Each emotion corresponds with a particular metamotivational state. Within the item pool, there are at least two items which address the same metamotivational pair.

For each emotion-pair, across the two items per pair, respondents could either:

- endorse *emotion (a)* on both items
- endorse *emotion (b)* on both items
- endorse *emotion (a)* on one item and *emotion (b)* on another

Thus, the most psychodiverse responding would be (c); thereby, (c) is scored as 1; whereas (a) and (b) are both scored as 0. This scoring method is applied across the eight emotion-pairs, for the sixteen items. Scores on these eight component variables can be summed to compute: (i) a psychodiversity total score and/or; (ii) four component psychodiversity scores (one for each metamotivational state pair); and/or (iii) the eight scores can be interpreted at the level of the emotion pairs. Higher scores indicate greater psychodiversity.

A worked example (including two items)

1. You are in a city and you need a taxi. By chance, one stops in front of you. But before you can get in, someone jumps in ahead of you. How would you feel?

accepting [ ] or argumentative [ ]

2. You are with your friends on a bus and are talking excitedly to one another. A man turns around and tells you to be quiet. How would you feel?

compliant [ ] or defiant [ ]

Both of these items correspond with the negativism-conformity metamotivational state pair; the emotion response terms *argumentative* and *defiant* align with the negativistic state, whereas *accepting* and *compliant* align with the conformist state.

If Respondent A endorses both negativistic (or both conformist) emotion terms across the two items, the respondent thereby scores a total of zero, as a result of reporting consistency in both situations. Respondent A therefore is considered to be not psychodiverse.

If Respondent B, on the other hand, were to endorse *argumentative* in item one and then *compliant* in item two, respondent B thereby would score a total of one for displaying inconsistency in both situations. Respondent B therefore is considered to be more psychodiverse in terms of these two items. By summing scores across other pairs of items for all metamotivational states, a total psychodiversity score is obtained.

Illustrating item validity

The above example items were generated for the psychodiversity questionnaire item pool in the Alfonso & McDermott study (2020) and were tested by frequency analysis of responses for measurement validity. Table 1 shows that the frequency of participants endorsing the *argumentative* response option (83.2%) for item 1 is disproportionate to the frequency of participants endorsing the *accepting* response option (16.8%) in the same item. This suggests that in the situation presented by item 1, respondents are more likely to experience the negativistic state than the conformist state; thus, the item does not demonstrate sufficient metamotivational ambiguity. As a result, item 1 is a *bad* item psychometrically as a potential indicant of psychodiversity, displaying poor validity.

In contrast, for item 2, the frequency of participants endorsing the *defiant* response option (52.5%) is broadly equivalent to that of those endorsing the *compliant* response option (47.5%) - thus, respondents on this item are no more likely to endorse one emotion response term over the other. As such, item 2 is a *good* item psychometrically as a potential indicant of psychodiversity, displaying sufficient validity.

To summarise, a psychometrically valid item for a psychodiversity questionnaire measure ideally should have a 50% response frequency for both emotion response terms, or at least within the 45% to 55% range. However, it is recognised that in a population at large, some metamotivational states and their concomitant emotions may be less prevalent than their opposites. Ideally, there would be the development of norms to determine what constitutes balance in this finessed respect. In this regard, it would be interesting also to measure state salience as a potential covariate of emotion choice.

What has been done empirically so far?

Three studies developing this methodology have been conducted at the University of East London School of Psychology (Saunders & McDermott, 1993; Thorpe-Jones & McDermott, 2019; Alfonso & McDermott, 2020). These studies have progressed the measurement of psychodiversity, with subjective well-being as the main criterion variable.

In the Saunders & McDermott study (1993), 111 items were generated for the first version of the Cross-Situational Response Questionnaire. 60 out of those 111 items were selected and used for the final analysis. This selection of items for the analysis was determined by examining whether each emotion response term within an item was selected by an equivalent portion of the respondents, as observed in a frequency distribution of such. Such an equivalent distribution of responses across the two emotion terms within an item is taken to indicate *metamotivational ambiguity*, thereby an item which can be used in a measure of psychodiversity. This method of item identification was also carried out by the other two studies that followed.

In the Thorpe-Jones & McDermott study (2019), a further 59 items were generated and 16 items out of those 59 were identified as metamotivationally ambiguous and used in the final statistical analysis. Within these sixteen items were four items for each of the four metamotivational state pairs. Two pairs of emotions were assigned for each metamotivational state pair (for example, bored vs relaxed, and anxious vs excited for the telic-paratelic pair). For each emotion pair, two items were selected, producing sixteen items in total.

In the Alfonso & McDermott study (2020), these sixteen items were edited and tested again for validity, along with the addition of thirty newly generated items. From these forty-six items, six items were used in the final analysis, two for each motivational state. No items for the alloic-autic metamotivational states showed sufficient ambiguity to be included. As an alternative, the alloic-autic items with the highest metamotivational ambiguity in the 2019 study were incorporated into the analysis in the 2020 study.

In all three studies, it was initially hypothesised that, based on previous literature, psychodiversity is a concomitant of well-being. However, it has been found that there was no singular relationship between subjective well-being and overall psychodiversity. Instead, psychodiversity for specific state pairs is more closely related to well-being, and each state pair is associated with well-being in varying degrees and not always in a positive correlational direction. Specifically, the Thorpe-Jones & McDermott study (2019) found that overall psychodiversity was associated with poorer mental well-being and that psychodiversity in the negativism-conformity state pair was found to be positively correlated with well-being. Likewise, the Alfonso & McDermott study (2020) found differences in psychodiversity across the alloic-autic and mastery-sympathy state pairs, in particular with

Table 2

Emotion pairs useful for psychodiversity measurement

Telic-paratelic	Mastery-sympathy
bored/relaxed	assertive/harsh
anxious/excited	grateful/guilty
Negativism-conformity	**Alloic-autic**
defiant/compliant	*Yet to be confirmed*
angry/obliging	
rejecting/accepting	
rebellious/compliant	

psychodiversity in the former in relation to breadth of coping and in the latter with resilience. Thus, in these two more recent studies, state-specific psychodiversity appears to contribute differentially to well-being, a possibility that needs further investigation. These results thereby also imply that: (a) psychodiversity is a multi-dimensional rather than unidimensional construct; and (b) that being psychodiverse, that is, intrapersonally inconsistent, should not necessarily be equated with effectiveness and adaptiveness.

Table 2 shows the emotion pairs that have been identified as having utility in the context of generating items for inclusion in the psychodiversity questionnaire pool.

Future Directions

Expanding the item pool

Though a workable methodology as described here for producing a self-report measure of psychodiversity has been established through the work done so far, it is acknowledged that whilst we have a full complement of items for the telic-paratelic and negativism-conformity metamotivational pairs, we do not as yet have a stable item pool for the mastery-sympathy pair and in particular for the autic-alloic pair. These have proved to be more difficult to identify empirically and need further developmental work. An obstacle to this work has been the identification of suitable emotion terms for the autic-alloic pair that also are intelligible and meaningful to the general reader. A possible explanation for this difficulty in identifying emotion pairs for these metamotivational states lies in the recognition that allocentrism in predominantly collectivist cultural settings is valued more so than autocentrism in mainly individualistic ones (Triandis, Leung, Villareal, & Clack, 1985). Thus, social desirability bias may tend to skew responses, making it problematic to identify an approximate 50:50 response distribution. The solution to this challenge in part lies in recognising that the transactional metamotivational pairs co-exist phenomenologically. Thereby, future work should focus upon identifying items and emotion terms that correspond with autocentric sympathy vs allocentric sympathy, and for autocentric mastery vs allocentric mastery.

The exploratory studies conducted so far consistently have yielded items for the bored-relaxed and anxious-excited emotion pairs corresponding with the telic-paratelic metamotivational states. Thus, there are sufficient items in this part of the psychodiversity questionnaire item pool. Likewise, for the negativism-conformity pair, there have been items showing validity for various emotion response pairs within studies, however additional replication would be optimal. It should be noted that in the Alfonso & McDermott study (2020), new emotion response terms were generated for both the negativism-conformity and mastery-sympathy state pairs, such as defiant/compliant and assertive/harsh, in addition to the emotion response terms as prescribed by Apter (1989). Further item frequency analysis will be required before these new items can be considered as eligible for inclusion in a final version of the psychodiversity measure.

Despite this progress, much additional work is needed in terms of generating viable items for the combined alloic-autic and mastery-sympathy metamotivational states. It has proved especially difficult to achieve this across the Thorpe-Jones & McDermott (2019) and the Alfonso & McDermott (2020) studies. The main issue that needs to be confronted here is the lack of self-explanatory, commonly used, emotion term pairs that are unlikely to elicit a strong social desirability bias.

Broadening construct validity & reliability testing

In addition to expanding the item pool, further work is needed on construct validation by extending the range of criterion variables. With regard to the association of psychodiversity with well-being, further investigation is needed of how psychodiversity in each state pair may differentially contribute to psychological functioning and its various components and manifestations, such as hardiness/resilience, breadth of coping, life satisfaction, emotional lability, and eudaimonic well-being. Also, studies should be undertaken that involve testing the emergent psychodiversity measure against other psychological models in order to demonstrate utility.

Moreover, as both Thorpe-Jones & McDermott (2019) and Alfonso & McDermott (2020) have done, future studies alongside a metamotivationally multidimensional measure of psychodiversity should continue to explore self-reported consistency as a predictor variable, given that self-perceived inconsistency has been found to contribute to behavioral inconsistency (Bem & Allen, 1974).

Lastly here, the issue of test-retest reliability of the measure will need to be addressed in future work: that it is to say, whether the same respondent scores similarly on the psychodiversity questionnaire from one occasion to another. Such testing will have to address and keep in mind that participants in such a study may respond differently to the same item scenario on subsequent occasions, it being possible for an individual to be metamotivationally different in the same situation when presented with it on more than one occasion. Such retesting, which is ostensibly about reliability, thereby would also be able to assess the extent to which an individual can experience different emotions in the same situation - a key aspect of what it means to be psychodiverse.

Making links to similar concepts

In theory, psychodiversity shares similarities with the notion of the ambivert personality, given the bistability of psychological states and responsiveness to and experience of environmental contingencies. Ambiverts are defined as possessing a stable combination of introverted characteristics, such as introspection and observation, and also extraverted features, such as assertiveness and enthusiasm (Grant, 2013). Such individuals might be posited as most psychodiverse. Recent findings, however, are unclear about the relationship between ambiversion and well-being, with Miller et al. (2020) only being able to show that extraversion is a moderator of the relationship between childhood experience and health. A potential association between varying degrees of psychodiversity, ambiversion, extraversion, and introversion, as well as how they covary with well-being, could be explored.

With psychodiversity as a moderator variable, the role of motivation in facilitating attitude-behavior congruence/incongruence (as after Fazio's (1990) exploration of the Theory of Planned Behavior) and how such varies from situation-to-situation could be investigated. The relevance of motivation to decision-making processes is highlighted in the MODE model (Motivation and Opportunity as DEterminants of attitude-behavior processes), specifically in relation to how motivation is a strong mediator of such processes, influencing judgement and behavior (Schuette & Fazio, 1995).

Further research needs also to explore potential associations of psychodiversity with demographic variables, such as sex, age and cultural background. For example, sex differences in personality research have found that generally men report higher self-esteem and assertiveness whereas women report higher extraversion, anxiety, trust, and nurturance (Feingold, 1994; Costa Jr et al., 2001). However, sex differences in cross-situational inconsistency have yet to be addressed. Moreover, significant cultural differences between East Asian Americans and European Americans have been found in relation to self-concept stability and consistency across situations, with the former having been shown to be more inconsistent than the latter across situations and relationship contexts (English & Chen, 2007). This pattern potentially alludes to cultural differences in psychodiversity or state dominance in the mastery-sympathy and alloic-autic pairs, which are transactional and relational states, thereby warranting further investigation. Research involving cultural backgrounds on cross-situational and intra-individual incon-

sistency would be beneficial. Such exploration might examine whether people in collectivist cultures experience less psychodiversity day-to-day than those in individualist ones wherein expression of momentary ego states would be more valued and encouraged.

With respect to age and whether one becomes more or less psychodiverse over the lifespan, there have been a number of longitudinal studies exploring the stability of personality which report moderate change in such occurring from childhood to adulthood (Roberts et al., 2006; Harris et al., 2016). Thus, it would be worth exploring the stability of psychodiversity over the lifespan, including the influences of developmental stages and changes in life circumstances, and associated impacts on mental well-being.

Summary

Being able to validly and reliably measure psychodiversity is advantageous in various ways, namely, to gain further understanding of the complex relationship between the individual and their immediate environmental and social contexts, and how this mediates psychological functioning and well-being. While progress on developing a method for producing a novel and valid psychodiversity measure has been reported here, there is still much development work and research that remains to be done in order to reach the final goal of a metamotivationally comprehensive questionnaire.

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