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THE PSYCHOLOGY OF PHILOSOPHY: EXPLORING FREE WILL AND MENTAL HEALTH

Aikman, David

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ABSTRACT

Recently, the psychological implications of philosophical beliefs, such as the belief in free will, have been the subject of much investigation. For example, free will belief has been found to display a positive correlation with decision-making ability, expression of gratitude, and academic performance. The current study aims to further investigate a once-observed relationship between free will belief and positive mental health, while also incorporating beliefs in dualism and determinism, as advised by contemporary authors. Because no study has investigated these variables in a similar combination before, an exploratory approach is taken in analysis. Results provide no evidence of a relationship between mental health and free will belief, or belief in determinism. Belief in dualism was found to have a negative correlation with mental health. These results, and their implications for counselling and psychotherapy, are discussed.

INTRODUCTION

A substantial body of evidence suggests our beliefs influence – or at least relate to – our behaviour (Slusher and Anderson, 1989; Molden and Dweck, 2006) and mental health (Furnham, 2017; Schroder, et al., 2015). For example, belief in life after death is related to lower levels of anxiety, depression, paranoid ideation and other markers of mental illness (Flannelly, et al., 2006). Relationships such as this can be explained with reference to everyday experiences: people who believe in an afterlife often engage in religious activities that promote wellbeing, such as involvement in community and religious counselling (Hayward and Krause, 2014).

However, some beliefs do not have obvious real-life implications as they refer to abstract concepts usually confined to philosophical debate. Within the past 15 years or so, psychologists and philosophers have generally concluded that abstract beliefs can have concrete manifestations (Knobe, et al., 2012; Zedelius, Müller and Schooler, 2017). For example, one of the major subjects of these investigations, **Free Will Belief (FWB)**, has been found to positively correlate with expression of gratitude (MacKenzie, Vohs and Baumeister, 2014), decision-making ability (Feldman, 2014), academic performance (Feldman, Chandrashekar and Wong, 2016), and self-control (Rigoni, et al., 2012). On the other hand, presenting people with arguments against the existence of free will hinders their problem-solving abilities and limits creativity (Schooler, et al., 2014). Furthermore, chronic free will disbelief is associated with heightened levels of conformity (Alquist, Ainsworth and Baumeister, 2013). Most pertinently, FWB is positively correlated with measures of positive mental health, such as life satisfaction and perceived meaning in life (Crescioni, et al., 2016). The primary motivation for the current study is to further investigate this relationship, which has been discussed for many years (e.g., Perry, 1935, p.323).

In older psychological studies, Free Will Belief was defined by the experimenters (e.g., Viney, Waldman and Barchilon, 1982). Given that the beliefs of philosophically inclined academics are unlikely to reflect those of most people, this led to definitions of FWB as being disconnected from the beliefs of the general public (Nadelhoffer, et al., 2014). One example of this disconnect was the treatment of FWB as the opposite of belief in determinism (the idea that the outcomes of all events are *determined* through the laws of cause and effect). In other words, people were assumed to believe in free will *or* determinism, not both or neither. Accordingly, questionnaires were designed to measure FWB and **Determinism Belief (DetB)** in combination, with each belief placed at opposite ends of the same scale. Contrary to this design, beliefs in free will and determinism are usually uncorrelated (Nadelhoffer, et al., 2014; Paulhus and Carey, 2011), meaning people often have a similar strength of belief in both concepts. This was not recognised when the two beliefs were treated as antagonists.

Recent studies employ definitions of FWB informed by empirical investigations of the public's beliefs rather than the assumptions of experimenters. From these investigations, there is a general convergence on the idea that FWB is the belief in the ability to make choices and defy constraints (Feldman, 2014; Monroe and Malle, 2010). Questionnaires thought to better measure FWB as it exists in the minds of most people have been developed based on the conclusions of this contemporary empirical approach. The two most commonly used FWB questionnaires do not assume antagonism between FWB and DetB (Nadelhoffer, et al., 2014; Paulhus and Carey, 2011). One such questionnaire will be used in the current study.

Another philosophical position that has attracted some attention is dualism, which is the idea that the universe is fundamentally composed of two distinct substances usually defined as mind and matter (Robinson, 2018). Opposing dualists are monists, who believe mind and matter are fundamentally the same, or that one or the other doesn't really exist (Schaffer, 2010). According to Reggia, et al. (2015), most people are dualists.

David Aikman, Psychology, College of Science of Engineering, davidjaikman@outlook.com

Some theorists even consider **Dualism Belief (DualB)** to be innately driven, i.e., it's 'natural' to believe in dualism (e.g., Bloom, 2005).

Recent perspectives on FWB and DualB suggest that the two beliefs are conceptually related (Montague, 2008) and that, when investigating the former, the latter should be measured and assessed alongside it (Nadelhoffer, et al., 2014). This is because the beliefs are often discussed together in philosophical discourse and display a positive correlation (Forstmann and Burgmer, 2018; Nadelhoffer, et al., 2014). Although there are some who argue against this conclusion (e.g., Mele, 2014), DualB will be measured and included in the current study, especially given recent theory linking DualB to depression (Fuchs, 2013) and dissociative states (i.e., feelings of 'unrealness'; Forstmann and Burgmer, 2017).

The primary motivation for the current study was to investigate the relationship between belief in free will and mental health. Including beliefs in determinism and dualism makes the scope of research broader. This paper will address the question of whether free will related beliefs are related to mental health.

METHODS

Participants

51 students of the University of Glasgow (41 female, age of 19.7 ± 1.9 years) were recruited for this study. 37 participants were offered course credits for completion of the experiment as they were in their first year of studying psychology. Other participants were offered no reward.

Procedure

All participants responded to 37 statements, presented in a random order, from the instruments described below in an online questionnaire. This procedure was approved by the University of Glasgow's board of ethics before data collection began.

Questionnaire

In order to probe free will related beliefs, I employed the first section of the **Free Will Inventory** (**FWI**; Nadelhoffer, et al., 2014). This instrument contains 15 statements evenly divided into 3 subscales designed to measure FWB (e.g., *'People always have the ability to do otherwise'*), DualB (e.g., *'The mind is more than a biological machine'*) and DetB (e.g., *'Every event that has ever occurred, including human decisions and actions, was completely determined by prior events'*). Participants indicated agreement with each statement on a 7-point scale ranging from 'Strongly Disagree' to 'Strongly Agree', as seen in Figure 1.

To explore mental health, two self-report scales were used: The **Brief Inventory of Thriving** (**BIT**; Su, Tay and Diener, 2014) and the **Major Depression Inventory** (**MDI**; Bech and Wermuth, 1998). The former contains 10 statements referring to general psychological wellbeing (e.g., *'In most activities I do, I feel energized'*), while the latter contains 12 items that refer specifically to symptoms of depression (e.g., *'Over the past two weeks, have you felt that life wasn't worth living?'*). Participants responded to the BIT in the same way as the FWI, whereas responses to the MDI were collected on a scale ranging from 'Not once' to 'Constantly', indicating frequency of depressive symptoms.

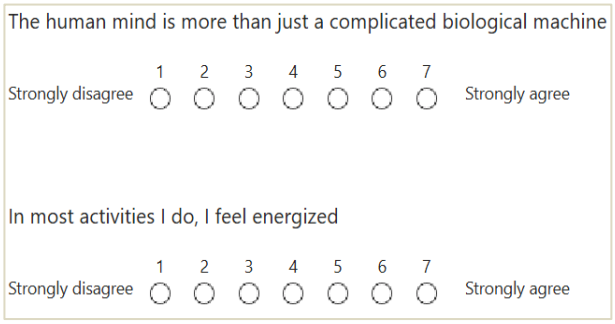

Figure 1: Excerpt from the questionnaire showing example statements and 7-point scale for the participant to indicate their agreement.

Analysis

Because the current study contains novel elements and belongs to a developing field, an exploratory approach was taken in analysis. This means that prior assumptions about what is measured by questionnaire responses were ignored. Therefore, the primary aim of this analysis is to reveal variables measured by the questionnaire, while the secondary aim is to calculate the relationships between these variables. This should provide insight into the nature of the beliefs and enable us to formulate a preliminary answer to the research question, upon which further research can expand. To achieve these aims, an **Exploratory Factor Analysis (EFA)** was used.

An EFA groups items together based on how item-responses are intercorrelated. Each group of items is said to be explained by an underlying *factor*, and when an item is explained by a factor, it is said to *load onto* that factor. *Factor loadings* can be positive or negative and have different strengths (a number between -1 and 1) that represent how the item relates to the factor. If an EFA was applied to a 10-statement questionnaire, it may reveal that one factor explains responses to 6 of the statements, while the remaining 4 statements load onto a separate factor. This would suggest that the questionnaire measures two separate constructs, which can be identified and labelled by examining common themes in the statements that compose each group and the direction of their factor loadings. After interpreting the factors produced by the EFA, their correlations can be reported. Correlations between factors are calculated in the form of Pearson's Product-Moment Correlation Coefficients, a number between -1 and 1, representing the direction and strength of the relationship (for more information about EFA, see Yong and Pearce, 2013).

RESULTS

EFA revealed the questionnaire results were best explained by four factors. The most statistically stable factor incorporated most items from both measures of mental health. Items from the

BIT (designed to measure psychological well-being) positively loaded onto this factor, whereas responses to statements from the MDI (designed to measure depression) negatively loaded onto the factor. This suggests the factor is related to high levels of well-being and low levels of depression, and was therefore labelled 'Health'.

The other three factors correspond almost exactly to the subsections of the FWI, which were designed to measure beliefs in free will, determinism and dualism. These factors were labelled accordingly. However, as seen in Figure 2, the DetB factor only explains responses to 4 out of 5 statements from the FWI subscale. This suggests that the missing statement (*'A supercomputer that could know everything about the way the universe is now could know everything about the way the universe will be in the future'*) differs from the others in its content. Indeed, the statement refers to the prediction of the future, unlike the others in the subscale, which only refer to the past. This informs the interpretation of the DetB factor, which may only encapsulate beliefs about what *could have happened*, rather than broader aspects of determinism concerning constraint on what *will happen*.

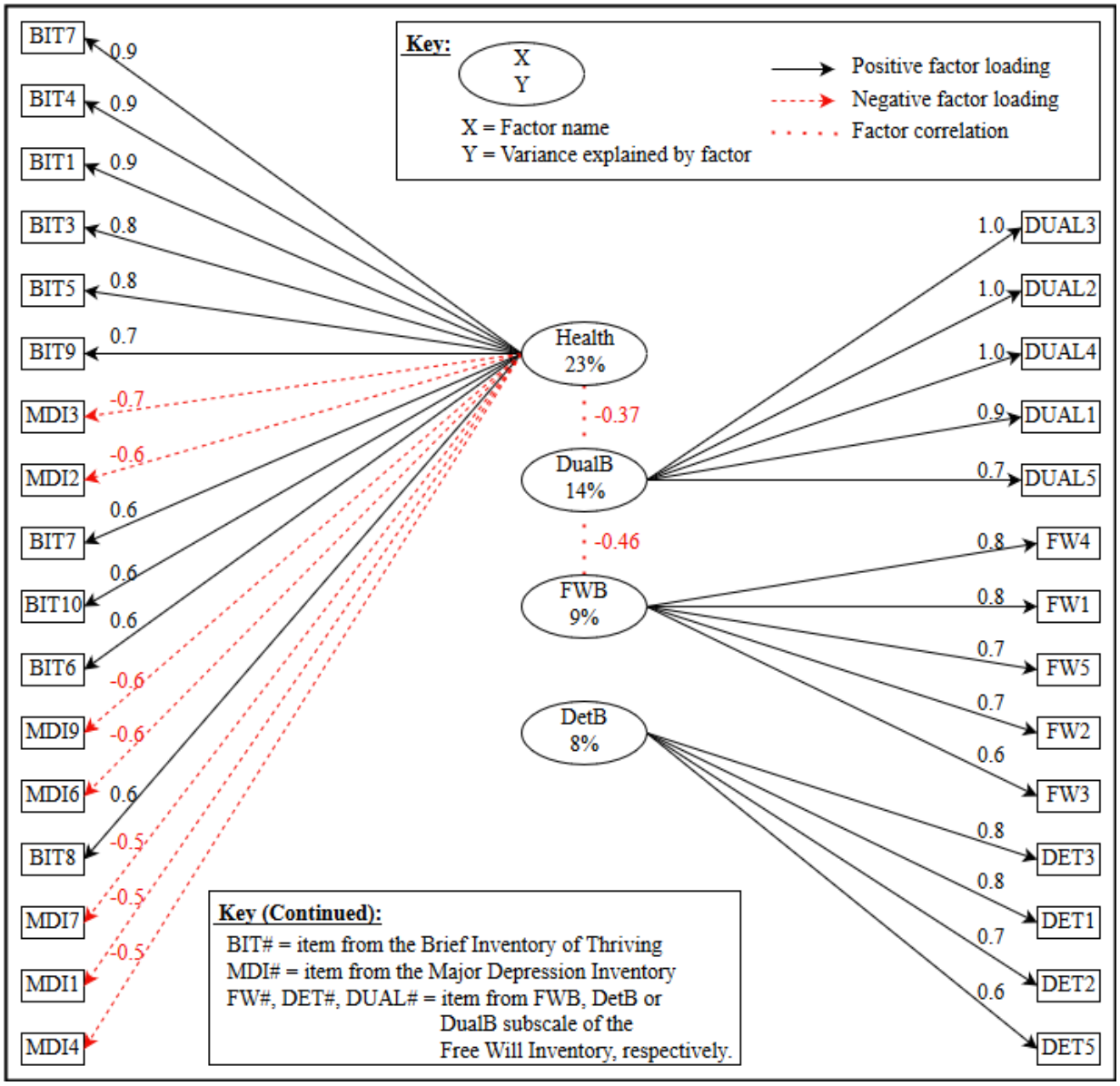

Figure 2: Results of Exploratory Factor Analysis. Ovals in the centre of the figure represent factors, which explain statements from the questionnaire, represented on the right and left extremes of the figure, to a degree indicated by labelled arrows projecting from the ovals to the statements. For example, Dualism Belief (DualB) explains all variance in responses to DUAL3, 70% of variance in responses to DUAL5, and none of the variance in responses to FW2. FWB stands for Free Will Belief and DetB is Determinism Belief (for more information about exploratory factor analysis, see Yong and Pearce, 2013).

Based on convention, only correlations >|0.3| are considered in EFA. Therefore, only two factor correlations were observed. FWB was negatively correlated with DualB, with moderate strength (-0.47). This means participants who strongly believe in free will, are more likely to *disbelieve* in dualism than those who do not. Additionally, DualB had a weak-to-moderate negative correlation with Health (-0.37), suggesting those scoring highly in DualB are more likely to have low scores for Health than those with low DualB scores. Note that significance values are not reported in EFA due to lack of hypothesis testing (Yong and Pearce, 2013).

DISCUSSION

Mental health (represented by the factor 'Health' in Figure 2) was only correlated with belief in dualism. A lack of correlation between Free Will Belief and Health contradicts the only other empirical investigation of the issue by Crescioni and colleagues (2016), who found that FWB positively correlated with mental health. This discrepancy may be explained by the fact that mainly psychology students participated in this study, while Crescioni, et al. (2016) investigated a more general population. Given the psychological content of questionnaire items in both studies, level of psychology education may have influenced the way in which many items were interpreted. However, it may also be the case that any relationship between FWB and mental health is unreliable by nature, too weak to reliably detect, or moderated by some unknown variable. In essence, the current study provides no evidence for a relationship between FWB and mental health.

The negative correlation between mental health and Dualism Belief is a novel finding with some precedent in non-empirical literature. Forstmann and Bergmer (2017) proposed that DualB promotes, or originates from, the phenomena of dissociative states. These can have positive effects as a response to trauma, but also result in unpleasant feelings of depersonalisation. The latter is often comorbid with depression (Prinz, et al., 2012), which some have defined as a disease of *corporealization*. In other words, depressed individuals may have a maladaptive concept of their own body that can manifest in feelings of constraint, heaviness, and isolation from the world (Fuchs, 2013). These feelings may be exacerbated when accompanied by the belief that one's mind really is isolated from the world (and the body) by way of a fundamental difference in metaphysical composition. These theories of dualism, dissociation and depression are consistent with the negative correlation between DualB and Health reported above. It may be fruitful for researchers to further investigate this relationship.

Another novel finding is the negative correlation between FWB and DualB. This contradicts previous findings, which indicated a positive relationship between the two beliefs (Nadelhoffer, et al., 2014; Forstmann and Burgmer, 2018). Again, the contradiction may be explained by the participation of psychology students in the current study, who have a conceivably different view of the mind and brain than more general populations sampled by other researchers. Specifically, it may be the case that in the current sample – consisting of mainly psychology students – people believe free will is only possible if the mind can interact with the brain, and that the mind could not interact with the brain if they were fundamentally separate. In philosophical terms, the sample may reject *interactionism*, which is a dualist position proposing that mind and matter, though distinct, can and do interact with each other (Eccles and Popper, 2014). This would explain the negative correlation between beliefs in free will and dualism, but further research is required to assess these speculations.

The practical significance of investigating abstract beliefs and mental health may lie in the possibility of introducing 'philosophical interventions' to standard psychotherapeutic or counselling procedures. These would aim to persuade people toward 'healthy' beliefs and away from 'unhealthy' beliefs. Belief interventions have already been conducted in other contexts, successfully manipulating beliefs and observing expected outcomes (Crescioni, et al., 2016; Forstmann and Bergmer, 2018; Schooler, et al., 2014). If these interventions are put into practice, studies investigating philosophy and mental health would enlighten practitioners as to which beliefs should be encouraged, and which should be avoided. However, if the routine manipulation of beliefs is considered unethical or revealed to be impractical, simply acquiring knowledge of philosophical beliefs and their implications may help counsellors and therapists better understand how a client views the world, which would surely benefit the therapeutic process.

CONCLUSION

In the current study, mental health was unrelated to belief in free will, which was negatively correlated with belief in dualism. These results contradict previous literature, suggesting psychology students may have unique beliefs surrounding the mind, brain and human agency. Belief in dualism was negatively correlated with mental health, which may be explained by connections between depression and dualism belief (Fuchs, 2013). In practice, knowledge of the implications of philosophical beliefs could aid therapists and counsellors.

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