

The Potential Role of Contemporary Trait Theory in Understanding Human Behavior

Student Name: Aidan Roche

Student Number: 121110118

Lecturer: Professor Raegan Murphy

Date: 23/11/2023

Declaration of Academic Honesty: I declare that the content of this assignment is all my own work. It has not been submitted in respect of any other course/module. Where I have used the work of others it is acknowledged and referenced accordingly.

Contemporary literature has popularized the use of a trait-based approach in describing personality. Theories devised in this manner are created by identifying the core traits present in humans, and using this information to create models of personality (Deary, 2009). This perspective on personality has resulted in the development of various trait theories, such as the popular Five Factor Model (FFM) (Costa & McCrae, 1999). These theories can serve as powerful tools for understanding, and even predicting, behavior (Lievens et al., 2018). Recent research has explored the potential of trait theory in understanding economic behavior (Rustichini et al., 2016) and entrepreneurial intention (Munir et al., 2019; Xu et al., 2016). The results of these studies provide a basis for more accurately understanding the role trait theory plays in behavior. Unfortunately, the FFM lacks explainability in terms of the underlying mechanisms that connect traits with behavior. In an attempt to resolve these criticisms psychologists have built upon this model to create modern trait theories, this includes Cognitive-Adaptive Trait Theory (CATT) by Matthews (2018) and Whole Trait Theory by Jayawickreme et al. (2019). These theories are better suited for describing the interaction between traits and observed behavior. This current paper aims to review modern research exploring the use of trait theory in understanding behavior, and relevant theories that may provide a deeper understanding of the role traits play in people's behavior.

The FFM provides an excellent structural model of personality, and has been shown to remain consistent across both time and culture (Widiger & Crego, 2019). It is comprised of five primary traits, sometimes referred to as the “Big Five”: neuroticism, extraversion, conscientiousness, openness, and agreeableness. This model was originally founded in the lexical paradigm, and determined important traits by maintaining the assumption that what is important to people is embedded in their language. A core concept within the FFM is the role of

neurobiology in the development and expression of personality (Roberts et al., 2005). The model asserts that traits develop independently of environmental influences, and prioritizes the influence of biological factors, such as genetics. This paradigm does provide a potential basis for explaining the role of traits in observed behavior; unfortunately, this explanation has faced significant criticism (Roberts et al., 2005; Matthews, 2018). Due to the lack of evidence supporting this biology based paradigm it is unable to explain the mechanistic link between personality and behavior. This results in a black-box model, and is therefore limited in its utility in regards to explaining how traits affect behavior.

In light of these concerns alternative theories were developed. This includes the two aforementioned theories, CATT and WTT, both of which were built on the foundation provided by the FFM. CATT attempts to resolve some of these issues by shifting from a biological paradigm to a cognitive paradigm. This theory emphasizes the role of cognitive processing in behavior, and suggests that traits function as a sort of intermediary between an individual's perception of a situation and their cognitive processing of this information. A central aspect of this theory is the idea of “adaptive patterns“, which states that individuals reactively adapt to their situation, and this adaptation is influenced by a person's traits. The current version of this theory provides cognitive adaptive models for extraversion and neuroticism. These models aim to provide an in-depth explanation for the relationship between cognitive skills, self-regulation, and behavioral adaptation.

WTT takes a slightly different approach to the same problem. This theory seeks to explain the role of traits in daily behavior by distinguishing between descriptive and explanatory aspects of a trait. The descriptive aspect is concerned with how a trait is expressed in terms of daily behavior. The explanatory aspect is based on the social cognitive approach and provides

further insight into the development of traits. This theory accounts for both within and between person variability in behavior. Behavioral variance is incorporated directly into the theory via the density-distribution approach. Since individual behavior is subject to change due to situational factors, such as social cues, there will be a certain amount of variance in behavior depending on context. However, a person will have a “central point or tendency around which he or she varies” (Jayawickreme et al., 2019). Therefore, traits are not useful in predicting context-specific behavior, but become visible in terms of averaged behavior.

While CATT and WTT take different approaches to explaining the role of trait theory in behavior, they share many similarities. In essence, they both agree that there is a certain amount of variance in individual behavior, and they both emphasize the importance of context. Behavior is the product of an individual's processing of sensory inputs. An individual's traits will exert a certain amount of influence on how this information is processed, but the output will not always be the same due to differences in input. Therefore, behavior is expressed within a certain range, and the effect of traits will be visible in the average of this range. Together, these theories provide an excellent model for understanding the influence of traits on behavior. However, for the utility of trait theory to be verified empirical data is needed. Recent research on the topics of economic behavior and entrepreneurial intention can provide this data.

A study by Rustichini et al. (2016) examined the role of trait theory in explaining economic behavior. Data was gathered from 1,065 truck drivers in the midwestern U.S. Some of the data gathered on each driver was used to quantify their individual traits in terms of the Big Five. The remaining data assessed various behaviors and life-outcomes such as credit score, job persistence, risk aversion, and willingness to delay pay. Following the analysis of this data, traits were found to be powerful predictors of behavior. For example, higher levels of openness were

positively correlated with a willingness to accept delays in payment. The study also found that cognitive ability was related to traits, and how they affect behavior. It was found that neuroticism and cognitive skills explained attitude towards risk, while agreeableness and cognitive skills explained important aspects of strategic behavior. By including cognitive skills in their analysis the study provides support for the CATT and WTT. This agrees with the notion that traits do not directly lead to behavior, but play a noticeable role in how an individual interprets and reacts to a situation. Rustichini et al. (2016) also argued that “extraversion modulates aversion to ambiguity”. The term “modulate” seems to reflect the role of traits as theorized in CATT and WTT. This was further emphasized in their conclusion, it was stated the agreeableness played a role in both cognitive and behavioral responses.

The interplay between traits and cognitive skills was heavily emphasized in this study. Part of this study included a sequential Prisoner’s Dilemma (PD) game, and participants were assessed on both their cognitive skills and personality traits. Prior to the start of the game participants were asked to make predictions regarding the moves of the other players. Players with higher cognitive skills were 20% more likely to predict that the other player would make the move that led to the highest overall outcome, even though this move required more personal risk. This demonstrates that while cognitive skills played a definitive role in the players decisions, traits were still found to be relevant. Agreeableness, for example, was positively associated with the same prediction, but marginally less so at about 18%. This suggests that neither cognitive skills nor traits are sole predictors of behavior, but both exert a certain amount of influence on decision making. This aligns closely with the models provided in CATT. Which suggests that cognitive skills play a crucial role in determining behavior, but these cognitive skills are informed, at least partially, by an individual's traits. In terms of the PD game this could suggest a

possible correlation between agreeableness and cognitive skills. Unfortunately, this study is limited in the depth of its analysis regarding the role of traits in behavior, partially due to the lack of an accepted mechanistic basis for personality.

To provide more insight into how traits actually affect personality researchers have compared theories of personality with the Theory of Planned Behavior (TPB) (Ajzen, 1991). One such study examined the role of traits and the TPB in predicting entrepreneurial intention (EI) (Munir et al., 2019). Data was collected on over 1,000 Chinese and Pakistani students, gathering information on their traits and their EI. When researching EI specific traits are used, as opposed to the Big Five; Munir et al. (2019) chose to focus on risk-taking propensity (RTP), locus of control (LoC), proactive personality (PP). They found that personality traits played a significant role in predicting EI. However, they found that personality traits played a larger role for Chinese students, compared to Pakistani students. Of these traits Munir et al. (2019) found that LoC was the most influential, followed by PP, but RTP did not play a significant role in predicting EI. These results were reinforced by a similar study assessing personality traits and EI (Xu et al., 2016). Xu et al. (2016) which found that LoC and innovativeness, which was not included by Munir et al. (2018), were both predictors of EI. Although, this study only took place in China, and is therefore subject to cultural bias. Interestingly, Xu et al. (2016) found that higher levels of external LoC were correlated with higher levels of EI. They noted that this suggested a possible misunderstanding of entrepreneurship. This may be related to the cultural differences found by Munir et al. (2018), and could implicate education as playing a role in how traits influence behavior. To better understand the relationship between traits and behavior Munir et al. (2018) used the TPB. By comparing their results with the TPB in regard to EI they concluded that

personality traits do exert some amount of influence on the dimensions of the TPB, although they did not specify the exact dimensions impacted.

The observation of cultural differences does have significant implications in regards to understanding how traits affect behavior. It is unclear what is causing this cultural difference (Munir et al., 2018), but it is clear that the impact of traits in behavior is mediated by other factors. This does still fit into CATT as it accounts for various external factors such as social influence, and therefore allows for cultural variation in the expression of traits via behavior. A possible explanation for this could be differences in education. Based on the findings of Xu et al. (2016) it could be argued that education, or even more specifically knowledge, has some mediary effect on the influence of traits on behavior. While this is not accounted for directly in CATT, CATT does include factors in its models such as: exposure/practice and appraisal of challenge. Educating an individual on a topic could constitute exposure, and could consequently alter their appraisal of a situation. Both of these factors are components of a larger cognitive process that determines people's reactions to a situation. This would further support the argument that traits do not directly influence behavior, but instead exert some amount of influence on the cognitive processes determining behavior. Since the results of these studies continue to find traits to be valid predictors of behavior it is clear that traits do play a noticeable role, although behavior is still subject to a variety of other factors, both internal and external.

All of the previously described studies help illustrate the point that personality traits matter in regards to behavior. However, these studies provide limited insight regarding the mechanistic link between the two. To bridge this gap CATT and WTT could be used as possible explanations. A central point of both of these theories is intra-individual variation of behavior. They both assert that behavior is reactive/adaptive and will change due to circumstance. The

influence of traits alone is not powerful enough to generate identical behavior in different situations. Unfortunately, all of the aforementioned studies do not assess behavior in a manner that accounts for this. They are focused on testing the predictive power of traits, and do not assess intra-individual variance across multiple contexts. For CATT and WTT to function as accurate explanations of behavior there needs to be some empirical backing to this claim, due to its foundational role in both theories.

This gap in the literature was acknowledge by Lievens et al. (2018), and resulted in the publishing of their paper *The Predictive Power of People's Intraindividual Variability Across Situations: Implementing Whole Trait Theory in Assessment* (Lievens et al., 2018). This paper consisted of three studies on the topic. The first study looked for a correlation between intra-individual variability and self-measures of variability, and assessed the value of within-person variability as an added predictive measure to traditional mean scores. Their findings found a distinct correlation between self-reported variability and observed variability. This is a crucial first step as it “lend[s] credence to the notion of within-person variability representing not only error variance but also substantive variance” (Lievens et al., 2018). Intra-individual variability was also found to provide significant predictive value when added to traditional mean scores. This finding provides vital support for CATT and WTT, and implicates them as better predictors of behavior compared to traditional trait theories when looking at behavior over longer periods of time.

The second study in this paper was used to validate their measures of within-person variability, and to ensure that this reflected actual real life variance. This study proved the effectiveness of their measures, and allowed them to move to their third, and final, study. This last study analyzed the impact of adding within-person variability as a measure in predicting job

performance. They found there was no relationship when looking at individual task performance, but there was a significant relationship at the contextual level. Overall, these studies are able to provide critical evidence for the value of intra-individual variability as a component of trait theory.

Trait theory is not useful for predicting behavior situationally, it is useful for contextualizing the role of traits in average behavior across time (Jayawickreme et al., 2019). Human behavior is complex, and is subject to the influence of a broad range of factors (Ajzen, 1991). Behavior could be considered a puzzle, with each influencing factor its own piece. The value of trait theory lies in its ability to explain one piece of this puzzle. It does not provide the complete answer, but it does provide instrumental value in eventually understanding behavior as a whole. The studies reviewed in this paper suggest that CATT and WTT could be used as explanations for how trait theory fits into the larger puzzle of behavior.

This current paper has primarily focused on the similarities of these two theories, and has not discussed their distinctions. CATT enters into more depth regarding the cognitive mechanisms through which traits affect behavior. WTT, on the other hand, divides traits into two dimensions: descriptive and explanatory. The explanatory side is concerned with the cognitive processes that inform states, and is founded on the social-cognitive approach. The descriptive aspect refers to how these traits are expressed in daily behavior. WTT states that the influence of traits will not be evident in a single situation, but that traits function as a central point around which behavior will revolve. The principal element of the cognitive explanation of WTT is the link between inputs, intermediaries, and outputs.

It is possible that WTT and CATT could function as levels of abstraction in regard to how traits influence behavior. WTT provides a holistic approach, concerning itself with multiple

facets of the trait, but is limited in its description of traits at a granular cognitive level. Therefore, it could be argued that CATT is a lower level of abstraction, and provides a basis on which WTT could rest. CATT provides comprehensive models that explain the role of traits on behavior at the cognitive level. This proposition is currently a hypothetical concept, but could potentially help explain how personality traits are related to behavior at multiple levels of abstraction.

While the idea of integrating CATT and WTT is a purely speculative proposal, when viewed independently there appears to be significant empirical data to back the main claims of these two theories. These theories shift away from the biological foundations of the FFM, focusing more on the cognitive aspect and the expression of traits in behavior. Intra-individual variance of behavior is accounted for in both models, and they assert that traits influence how people adapt to situations. By explaining the underlying mechanisms of this adaptation it is possible to use trait theory to understand at least one aspect of how people behave. There is a plethora of evidence that proves that personality traits play a role in behavior, and contemporary trait theory has made great advances in explaining this interaction. While further research is still required to verify aspects of these theories, the current literature appears to be promising in regard to the future of this field, and its utility in understanding behavior.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211.
- Costa, P. T., & McCrae, R. R. (1999). A five-factor theory of personality. *The five-factor model of personality: Theoretical perspectives*, 2, 51-87.
- Deary, I. J. (2009). The trait approach to personality. *The Cambridge handbook of personality psychology*, 1, 89.
- Jayawickreme, E., Zachry, C. E., & Fleeson, W. (2019). Whole trait theory: An integrative approach to examining personality structure and process. *Personality and individual differences*, 136, 2-11.
- Lievens, F., Lang, J. W., De Fruyt, F., Corstjens, J., Van de Vijver, M., & Bledow, R. (2018). The predictive power of people's intraindividual variability across situations: Implementing whole trait theory in assessment. *Journal of Applied Psychology*, 103(7), 753.
- Matthews, G. (2018). Cognitive-adaptive trait theory: A shift in perspective on personality. *Journal of personality*, 86(1), 69-82.
- Munir, H., Jianfeng, C., & Ramzan, S. (2019). Personality traits and theory of planned behavior comparison of entrepreneurial intentions between an emerging economy and a developing country. *International Journal of Entrepreneurial Behavior & Research*, 25(3), 554-580.
- Roberts, B. W., Wood, D., & Smith, J. L. (2005). Evaluating five factor theory and social investment perspectives on personality trait development. *Journal of Research in Personality*, 39(1), 166-184.

- Rustichini, A., DeYoung, C. G., Anderson, J. E., & Burks, S. V. (2016). Toward the integration of personality theory and decision theory in explaining economic behavior: An experimental investigation. *Journal of Behavioral and Experimental Economics*, 64, 122-137.
- Widiger, T. A., & Crego, C. (2019). The Five Factor Model of personality structure: an update. *World Psychiatry*, 18(3), 271.
- Xu, X., Ni, H., & Ye, Y. (2016). Factors influencing entrepreneurial intentions of Chinese secondary school students: an empirical study. *Asia Pacific Education Review*, 17, 625-635.