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### Individual differences in time perspectives and risky financial choices<sup>☆</sup>



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#### ABSTRACT

Preferences for risks have been a subject of interest to both economists and psychologists. This has given rise to many findings about the role of psychological factors in influencing risky choices. The presented studies focused on the role of Time Perspectives (TPs) in explaining people's risky financial choices. The main goal was to examine the relationship between people's TPs (chronic and induced) and their propensity to invest and undertake investment risks. Three studies on Polish national representative samples ( $N_1 = 1093$ ;  $N_2 = 1081$ ,  $N_3 = 1563$ ) and one on a sample of Polish adults ( $N_4 = 246$ ) were conducted. The results showed that chronic Future and Present Hedonistic TPs are the most important in the context of risky financial choices. Higher Future TP is related to a propensity to invest and make safe investment choices. Higher Present Hedonistic TPs is related to a low propensity to invest and risky investment. Moreover, induced Future and Present Hedonistic TPs lead to similar patterns of results to those obtained in studies on chronic TPs.

#### 1. Introduction

The factors that determine people's preferences for financial risks have been a subject of interest to researchers in the field of psychology in recent decades. They have identified numerous variables that influence risky financial decisions, for example personality traits (e.g., narcissism, sensation-seeking, or locus of control, Foster, Reidy, Misra, & Goff, 2009; Foster, Shenesey, & Goff, 2011; Sekścińska, 2015b; Wong & Carducci, 2016) and attitudes toward money (e.g., Sekścińska, 2015b). However, numerous individual characteristics are still to be investigated. In this paper, we will focus on one psychological factor which, based on a theoretical framework, as well as on a few studies conducted to date in this field, seems to be highly relevant in explaining people's financial risk preferences, namely temporal framing, which is also referred to as Time Perspective (TP; Zimbardo & Boyd, 1999; Zimbardo & Boyd, 2008).

Time perspective is a psychological construct that represents an individual's relation with time. It emerges from the cognitive process for portioning human experience into the past, present, and future temporal frames (Zimbardo & Boyd, 1999). One of the most important

theories in the area is Zimbardo and Boyd's (1999, 2008) Time Perspective Theory (TPT). The authors distinguish five TPs, namely: Past Negative, Past Positive, Present Hedonistic, Present Fatalistic, and Future (see Stolarski, Fieulaine, & van Beek, 2015). TPT posits that one's perception of time influences decision making by locating the primary set of psychological influences within the temporal frames of either the present, the past, or the future (Zimbardo, Keough, & Boyd, 1997). It was found to be a relatively stable individual difference trait, although there are initial studies showing that it can be modified by the therapeutic process (Sword, Sword, Brunskill, & Zimbardo, 2014). It might also be situationally (Zimbardo & Boyd, 1999) and intentionally modified (Zimbardo & Boyd, 2008), but no experimental study investigating this issue and presenting ways of manipulating situational TP is known to the authors.

Individual differences in TPs have been associated with affective, cognitive, and behavioral outcomes. Research has shown that TP is related to subjective well-being (Zhang, Howell, & Bowerman, 2013) and individuals' affective experiences (Stolarski, Matthews, Postek, Zimbardo, & Bitner, 2014), and that it influences cognitive processes (Zajenkowski, Stolarski, Witowska, Maciantowicz, & Łowicki, 2016), as

 $<sup>\</sup>textit{Abbreviations}. \ \text{TP, time perspective; TPT, time perspective theory; SZTPI, short version of the Zimbardo Time Perspective Inventory} \\$ 

The sentences used to activate situational motivation were chosen based on the results of the pilot study. A total of 115 Polish adults took part in the pilot study. They were randomly assigned to one of five experimental conditions, where each TP was induced. Participants read two sets of three sentences each and were then asked to recall the sentences they had just read and write the first three associations that came into their minds. We expected that the associations would be related to the TP that was supposed to be activated. We marked all responses where all three associations were related to the TP or where two associations were related and the third was neutral as correct and counted them. One hundred and thirteen participants' associations were consistent with our assumptions, therefore we decided to use the experimental material in the main study in an unchanged form.

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well as social relationships (Stolarski, Wojtkowska, & Kwiecinska, 2016) and behavior (Harber, Zimbardo, & Boyd, 2003).

Although TPs were shown to impact a wide range of behaviors and decisions, their role in financial choices is severely understudied. Zimbardo and Boyd (2008) predicted numerous associations between TPs and financial behaviors, such as saving and spending money, however, to date, there has not been much research in this area. The study of the Magnify Money team on Time Personality and Financial Health indicates that people's financial health correlates strongly with their approach to time (Clements, 2014). Moreover, previous studies conducted in our lab suggest that there is an important role for TP in people's explaining saving and investing preferences (Maison & Sekścińska, 2014; Sekścińska, 2014). There are also studies which support the notion that TPs play an important role in financial

Firstly, one of the most significant aspects of personal financial decisions, especially investment decisions, is how much risk one is willing to take. The link between the propensity to take risk and TPs has been confirmed in numerous studies (Henson, Carey, Carey, & Maisto, 2006; Keough, Zimbardo, & Boyd, 1999; Zimbardo et al., 1997). Overall, research in this area shows that more future-oriented and less present-oriented individuals display fewer risky behaviors. Recent studies by Jochemczyk, Pietrzak, Buczkowski, Stolarski, and Markiewicz (2017) indicate that Present Hedonistic TP was more strongly linked to risk-taking propensity than were the Big Five personality traits. However, it has to be noted that the propensity to take risk is domain specific and people may be risk-seeking in one domain and risk-averse in another (Slovic, 1972; Weber, Blais, & Betz, 2002), so the results might not translate directly into consumers' financial choices. For example, in the study of Jochemczyk et al. (2017), Present Hedonistic TP was correlated with the propensity to take risk regardless of the risk domain, while Future TP was negatively correlated with risk-taking propensity in numerous domains with the exception of the propensity to take investment risk. This provides an additional support for the role of TP in risky financial behavior and, at the same time, highlights that the influence of TP on the propensity to take risks in financial decisions should be further investigated.

Secondly, a temporal aspect of financial choices should be taken into account. Decisions between spending, saving, and investing involve mental time traveling and are examples of intertemporal choices, involving tradeoffs between consequences (positive and negative) that will occur at different points in time (Frederick, Loewenstein, & O'donoghue, 2002). Numerous studies in the area of economic psychology show that time horizon, understood as the length of time period that is taken into account in the process of planning expenditures and savings (Rabinovich & Webley, 2007), plays an important role in financial decisions. For example, a longer saving horizon was found to have a highly significant effect on the likelihood of saving (Fisher & Montalto, 2010), and other studies show that people in debt have shorter time horizons than non-debtors (Lea, Webley, & Walker,

Thirdly, it has to be noted that successful management of household finances involves an ability to delay gratification. In numerous studies, people were shown to vary in their ability to wait for larger but delayed outcomes (Mischel, Shoda, & Peake, 1988), and this is often mentioned as an important determinant of individual saving and spending (Wärneryd, 1999). The ability to delay gratification is often linked with TP, as the tendency to delay gratification is the core feature of this construct, especially Future TP (Zimbardo & Boyd, 2008). Similarly, Present Hedonistic TP is characterized by deficits in this area. This suggests that TP might have an impact on decisions involving a choice between present and future rewards, such as decisions concerning consumption, saving, and investing. However, there are only a few studies investigating the relationship between the TPs and discounting, and their results show that these variables are similar but non-redundant (Daugherty & Brase, 2010) and correlate modestly (Stolarski,

Bitner, & Zimbardo, 2011).

Taken together, these findings show the links between individual differences in TPs and variables which have been associated with financial decision making, and this gives rise to a question: to what extent are various TPs related to consumption, saving, and investing decisions and the propensity to take financial risk? Our research focused on the relationship of individual differences in TPs and financial decisions, with an emphasis on the propensity to invest and to take risks in a financial domain.

Importantly, people may have some chronic level of TPs but various events in their lives may temporarily change them. It is, therefore, worth investigating whether particular TPs can be triggered by tasks unrelated to subsequent financial decisions, and whether the experimentally induced TPs influence financial choices in a manner similar to TP understood as an individual trait. Studies show that situational factors, such as mood (Guven, 2012), promotion and prevention motivation (Sekścińska, Maison, & Trzcińska, 2016), activation of women social roles (Sekścińska, Trzcińska, & Maison, 2016), and the level of construal (Rudzinska-Wojciechowska, 2017) can all influence financial choices. In this article, time framing — another type of situational factor—will be explored in the context of financial decisions.

#### 1.1. TP and personal investment choices and risky financial choices

The structures of individuals' risk preferences have been widely investigated. Research shows that there are numerous factors that influence this kind of decision, such as framing (Tversky & Kahneman, 1981), the source of probability information (Hertwig, Barron, Weber, & Erev, 2004), previous experience (e.g., Sekścińska, 2015a, 2015b), and individual difference traits (e.g., Campbell, Goodie, & Foster, 2004). The results of the studies indicate that decisions made in different domains (e.g. social, financial, health) should be analyzed separately, as an individual might be risk-averse in one domain and risk-seeking in another (Hanoch, Johnson, & Wilke, 2006; Slovic, 1972, Weber et al., 2002). Furthermore, even within a single domain (e.g. financial), people might not be consistent in the extent to which they prefer risk (Vlaev, Kusev, Stewart, Aldrovandi, & Chater, 2010). Taking these findings into account it is important to investigate whether the results linking TP with the propensity to take a risk in the areas previously investigated is maintained in decisions concerning the financial domain, such as those involving the propensity to invest, take investment risks, and take financial risks.

Based on the framework of TPT, we elaborated a series of hypotheses concerning the potential role of individual differences in TP, as well as its situational impact, in decisions regarding people's investment choices.

Past Negative TP reflects an aversive view of the past, which might be caused by actual unpleasant past experiences, negative reconstruction of past events, or a mix of both. It correlates with depression, anxiety, unhappiness, and low self-esteem. Individuals scoring high on this scale are not motivated to work for future rewards and are keen on gambling more than those in other TP groups (Zimbardo & Boyd, 1999). Other studies show that Past Negative TP is associated with anticipation of negative moods (Stolarski et al., 2014)—people scoring high in Past Negative TP rarely expect good outcomes of their actions and this might result in a low propensity to engage in future-oriented financial decisions. Taken together, we predict that individuals with high Past Negative score will (H1) show a lower preference for investment and (H2) present a lower propensity to take a financial risk than individuals with high Past Negative scores.

Past Positive TP is characterized by an opposite attitude toward the past to Past Negative TP, namely a warm, sentimental one. However, the two past TPs should be treated as separate dimensions, as they share only 6% of variance. The Past Positive scale correlates negatively with aggression, depression, and anxiety, and positively with self-esteem. Individuals with high results on this scale are more conscientious and

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