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You Only Live Once: Present-hedonistic time perspective predicts risk propensity

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ABSTRACT

Risk-taking has been linked to stable personality traits, such as impulsivity and extraversion. We propose that time perspective is another personal characteristic that affects risk taking. Specifically, we hypothesized that a habitual focus on the hedonic aspects of the present would be associated with greater risk-taking propensity in a variety of domains (e.g., health, investments, ethics). We conducted a study in which 514 participants filled out a number of scales, including the Zimbardo Time Perspective Inventory, a scale of risk-taking propensity, and the Ten-Item Personality Inventory. We observed that a Present-Hedonistic time perspective was more strongly (positively) linked to risk-taking propensity than was any other predictor, including personality traits. This relationship was observed in all studied risk-taking domains. On average, individuals who are focused on the hedonistic aspects of the present appeared to be more interested in risk-taking than are those whose do not focus on this perspective.

1. Introduction

Common sense points to risk attitude as a stable personality trait. Many of us observe some individuals consistently undertaking risky activities across a variety of situations while others shy away from them. This observation received initial support from a variety of theories and research based on lottery paradigms (e.g., Coombs, Dawes, & Tversky, 1970). After decades of research, there is broad agreement that risk taking (in a given domain, Weber, Blais, & Betz, 2002) is shaped by the decision maker's perception of the risk (e.g. Slovic, 1987; Slovic, Fischhoff, & Lichtenstein, 1982), perception of the benefits, and by his or her attitude toward the perceived risk (Weber, 2001; Weber et al., 2002).

However, a growing literature on emotional influences on risk assessment and risk taking (e.g. Figner, Mackinlay, Wilkening, & Weber, 2009; Loewenstein, Weber, Hsee, & Welch, 2001) indicates that not all risky situations have the same motivational significance. Exulting in a leap of faith here and now, perhaps to suffer later, is quite different from calculating the expected value of an onerous investment, where the timing of the suffering and exaltation is reversed (Nicholson, Soane, Fenton-O'Creevy, & Willman, 2005; Zaleśkiewicz, 2001). These situations differ clearly in their time horizons. We propose that a fuller understanding of risk taking should account for the way individuals focus on particular time perspectives.

1.1. Perceptions of immediate vs. delayed payoffs

As pointed out in most decision theories—both normative, expected value/utility theories (e.g., Von Neumann & Morgenstern, 1947) and the descriptive prospect theory (e.g., Kahneman & Tversky, 1979)—the decision to undertake risky action depends not only how we perceive risks and possible also the nature and timing of potential benefits (e.g., the delay of the payoff). How the timing of payoffs influences decisions has been studied from a number of perspectives and using a variety of terms (for a review, see Daugherty & Brase, 2010).

Samuelson (1937) posited that the value of a fixed payoff should decrease as the time of its delay increases. But what if the choice is between a smaller immediate payoff and a larger delayed payoff? Aversion toward waiting (discounting strength) varies among decision makers and may be dependent on individual characteristics, such as age (Green, Myerson, & Ostaszewski, 1999), impulsivity (Alessi & Petry, 2003), and extraversion (Ostaszewski, 1996).

Time perspective theory (Zimbardo & Boyd, 1999) emphasizes the role of stronger or weaker habitual focus on a given time horizon (i.e., past, present, and future) in determining one's thoughts, emotions, and behavior—including the weighting of immediate vs. delayed benefits. Time perspective (TP) is defined as "the often nonconscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events" (Zimbardo & Boyd, 1999, p. 1271). Through learning and cultural influences, specific biases in how time is cognitively and emotionally processed naturally develop.

Abbreviations: TIPI, ten-item personality inventory; TP, time perspective; S-ZTPI, Swedish Zimbardo Time Perspective Inventory; DOSPERT, Domain-Specific Risk-Taking Scale.

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As a consequence, relatively stable individual differences in these 'temporal framings' are formed. Zimbardo and Boyd (1999, 2008) distinguish five basic TP dimensions: Past-Negative; Past-Positive; Present-Hedonistic; Present-Fatalistic; and Future. Past orientations are robust predictors of emotional outcomes (e.g.Stolarski, Matthews, Postek, Zimabrdo, & Bitner, 2014, Zhang, Howell, & Stolarski, 2013), while present and future orientations tend to influence behaviors (e.g. Chittaro & Vianello, 2013; Keough, Zimbardo, & Boyd, 1999).

Zimbardo and Boyd (2008) use the language of discounting theories to describe time orientations, claiming, for example, that present-oriented individuals discount time more strongly than do future-oriented individuals, and thus are more likely to prefer immediate lower payoffs over later but higher payoffs. This idea finds partial confirmation in studies by Daugherty and Brase (2010). However, discounting and TP correlate modestly at most, which makes researchers conclude that these construct are similar, but non-redundant (Daugherty & Brase, 2010; see also Steinberg et al., 2009, for a discussion).

1.2. Time perspective and risk-taking: existing data

There is evidence that suggests that Present TPs correlate positively, and Future TP negatively, with behaviors such as risky driving (Zimbardo, Keough, & Boyd, 1997), smoking (Keough et al., 1999), and substance abuse (Apostolidis, Fieulaine, & Soulé, 2006). For example, people high in the Present-Fatalistic TP are less likely to use condoms, regardless of their attitudes toward condom use (Protogerou & Turner-Cobb, 2011). Meanwhile, a future TP is protective against drug use for a number of substances (i.e., tobacco, marijuana, hard drugs, though not alcohol; Barnett et al., 2013). Daugherty and Brase (2010) have shown that TP predicts such activities over and above personality and demographic characteristics.

Zaleśkiewicz (2001) distinguished two types of risky situations and thus two types of motives for risk taking: instrumental and stimulating risk taking. These motives distinguish situations when the risk is seen, respectively, as a necessity (the risky action is a means to an end) or as a direct pleasure (the risk is the end itself). While the former is correlated with an orientation toward the future (as defined by the Paratelic Dominance Scale; Gotts, Kerr, & Wangeman, 2000) and the tendency to think rationally (Epstein, Pacini, Denes-Raj, & Heier, 1996), the latter is related to arousal seeking (Gotts et al., 2000) and dysfunctional impulsivity (Dickman, 1990). Zaleśkiewicz (2001) has linked future orientation with instrumental risk taking, and impulsivity with stimulating risk taking. Applying this distinction to the DOSPERT (Domain-Specific Risk-Taking) scale (Markiewicz & Weber, 2013; Zaleśkiewicz, 2001) revealed that individuals scoring high on stimulating risk taking were prone to take recreational, gambling, ethical, and health risks (i.e., those associated with immediate gratification and possible losses in the future), while individuals scoring high on instrumental risk taking were prone to investment and social risk taking (associated with suffering some austerity now while waiting for future gratification).

1.3. The current study

We conducted the current study to explore how differences in propensity for risk taking could be linked to different TPs. We hypothesized that the Present-Hedonistic TP encourages risk taking by influencing perceptions of benefits as closer, almost at one's fingertips, making risky activity more appealing. On the other hand, those who have a strong Future TP might be more aware of and therefore weight potential costs more heavily, which would make risky activity less appealing. Importantly, we expected TP to have predictive power for risk-taking propensity over and above personality traits. TP, conceptualized as a mechanism of self-regulation or self-control (Stolarski, Ledzińska, & Matthews, 2013), is acquired over time, with experience (Zimbardo & Boyd, 2008), while personality is relatively more heritable (Riemann, Angleitner, & Strelau, 1997). Due to its particular relevance to self-regulation, TP is likely to affect risk-related decisions beyond what can be predicted from more stable personality variables.

The study was correlational, assessing the predictive strength of TP, personality traits, and demographic characteristics on risk-taking propensity.

2. Method

2.1. Participants

Five hundred and fourteen Polish-speaking participants (355 women, 159 men) aged 16 to 48 ($M = 23.1$, $SD = 3.4$) were recruited during a fourteen-day period through ads on various social media sites. A majority (63.8%) had begun or completed university; 33.7% had completed secondary school; and 2.5% had completed vocational training or primary school.

3. Measures

3.1. Time perspective

TP was measured using the Zimbardo Time Perspective Inventory, as amended by Carelli, Wiberg and Wiberg (S-ZTPI; 2011). This particular inventory has 64 items that refer to 6 different time perspectives: Past-Negative (PN); Past-Positive (PP); Present-Hedonistic (PH); Present-Fatalistic (PF); Future-Positive (FP); and Future-Negative (FN). The FN subscale is not included in the original scale, and was added to the S-ZTPI scale. Participants rate on a 5-point scale from 1 (definitely not) to 5 (definitely) the extent to which each statement describes them. For example, an item measuring PH was "Taking risks keeps my life from becoming boring." An item measuring FP was "I believe that a person's day should be planned ahead each morning." The Polish adaptation of this scale (Kozak, Sobolewski, & Mażewski, 2007) has been shown to be psychometrically sound (Stolarski et al., 2014). We conducted CFAs for the 5-factor and the 6-factor models of the ZTPI to further explore the measures' validity in the Polish context. Such analyses have not been previously published. The 5-factor model showed comparable fit indices to original version: $\chi^2/df = 2.40$ (as compared to 2.30 reported by Zimbardo & Boyd, 1999 and 2.56 reported by Carelli, Wiberg, & Wiberg, 2011), RMSEA = .05 (as compared to .06) and CFI = .78 (.63). The 6-factor model proved slightly better when compared to the Swedish results: $\chi^2/df = 2.36$ (2.55 for Swedish data), RMSEA = .05 (.06) and CFI = .77 (.62). In all, both versions revealed similar fit indices. As the 6-factor solution provides more nuanced information regarding TP profiles, and the novel dimension is not reducible to the basic five TPs, we applied the broader version of the ZTPI.

3.2. Risk-taking propensity

Risk-taking propensity was measured using the DOSPERT scale (Blais & Weber, 2006[1]), which is comprised of 30 statements that relate to various domains of risk including: ethical (E); financial/gambling (F/G); financial/investing (F/I); health/safety (H/S); and social (S). Following Weber et al. (2002), a general risk-taking score (G) was also created by averaging points from all subscales. Participants responded on a scale from 1 (very unlikely) to 7 (very likely). This scale is typically used to assess risk-taking propensity, risk perception, and expected benefits of risk; participants then must respond three times to each item. For the purposes of this study, we measured only risk-taking propensity using the question: "**For each of the following statements, please indicate the** likelihood **that you would engage in the described activity or behavior if you were**

[1] Polish translation accessed from: http://www8.gsb.columbia.edu/decisionsciences/research/tools/dospert.

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