



Temporal Focus and Entrepreneurial Orientation of Solo Self-Employed Workers

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Abstract. The temporal dimensions of managerial behavior and their impact on organizational outcomes have garnered increasing attention in the literature. Given the significant role of managers' time perception in shaping a firm's strategic direction, this study contributes by examining the relationship between temporal focus and the entrepreneurial orientation (EO) of solo self-employed workers. Drawing on a Dutch sample of 783 self-employed individuals, we find that both present and future temporal focus positively relate to their EO, and that this relationship is stronger for future focus. Our findings also suggest that these two temporal orientations act as substitutes rather than complements, in determining the EO of self-employed workers. We contend that this outcome may be attributed to the resource limitations typically encountered in solo self-employment. Collectively, our results underscore the critical role of temporal focus in the context of entrepreneurial pursuits.

Keywords: temporal focus, entrepreneurial orientation, solo self-employment.

JEL codes: D22, L26

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1. Introduction

Time perception and its boundaries determine how we perceive reality. This perception influences our daily decisions. Although everyone is confronted with the objective passage of time, individuals differ with respect to how they cognitively interact with time (Shipp et al., 2009; Soo et al., 2013). As Ancona et al. (2001: p. 518) note: “The experience of time varies across conditions and across actors”, and “...it relates directly to the perception of the passage of time”. In a work setting, this subjective perspective of time has important implications for individuals’ motivation, decisions, and performance (Levasseur et al., 2020). Specifically, the temporal dimension “... constitutes a fundamental dimension of strategy making” since “... decisions are made by individual decision makers, whose psychological view of time cannot be ignored” (Nadkarni and Chen, 2014: p. 1810, quoting Das, 2004: p. 58). It is therefore not surprising to see a vast and growing number of research on temporality outside the realm of psychology, which is the “home discipline” of early and more recent seminal works in this area (Lewin, 1942; Wallace and Rabin, 1960; Zimbardo and Boyd, 1999; Shipp et al., 2009). Despite this increased scholarly interest, to date the community of time scholars is still fragmented, as evidenced by the lack of consensus on how time and temporality is conceptualized (Bansal et al., 2024).

A special issue entitled ‘Time and Entrepreneurship’ in the journal *Entrepreneurship Theory and Practice* (ETP) in 1998 started the conversation on the importance of the notion of time for entrepreneurship. As Bird and West (1998: p. 6) noted in this special issue: “... temporal dynamics are at the very heart of entrepreneurship”. Indeed, entrepreneurial characteristics such as proactiveness and risk-taking are clearly embedded in time (Das and Teng, 1998) as time plays a pivotal role in the process of discovery and exploitation of entrepreneurial opportunities (Baron, 1998; Bird and West, 1998). Yet, more than 20 years after the publication of the ETP special issue, the role of the subjective experience and perception of time in entrepreneurial behavior remains a relatively understudied territory. This was acknowledged by Lèvesque and Stephan (2020: p. 178) who noted that: “... regardless of how one views entrepreneurship, it always involves the notion of time. It is therefore time we talk about time in entrepreneurship”.

In the present study, we investigate the relationship between temporal focus (TF) and entrepreneurial orientation (EO) in the specific context of solo self-employed workers. Thus, our study engages with two key concepts beyond temporal focus: EO and solo self-employment. As far as we know, we are the first to analyse TF for solo self-employed workers. The focus on solo self-employment is worthy of exploration for several reasons.

First, self-employed individuals represent a substantial segment of the workforce (Audretsch and Thurik, 2001; Thurik et al., 2013), with a considerable proportion of this group operating solo, i.e., without employees (Cielik and Van

Stel, 2024). Solo self-employed workers represent a unique and understudied subset of the broader entrepreneurial population, making this an important area for further empirical investigation. In the present study, we focus on Dutch solo self-employed workers.²

Second, examining temporal focus of solo self-employed workers aligns closely with the cognitive approach to entrepreneurship, which emphasizes individual differences in cognitive frameworks for perceiving and assessing opportunities, as well as decision making regarding the pursuit of these opportunities (Tang et al., 2021; Baron, 1998, 2007; Mitchell et al., 2002).

The concept of EO can be traced back to the seminal work of Miller (1983), and has later been refined by Covin and Slevin (1989), who proposed that a firm's entrepreneurial posture is shaped by its strategic decision-making and an operational philosophy characterized by innovativeness, risk-taking, and proactiveness. According to Miller (1983: p. 771): "An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is the first to come up with 'proactive' innovations, beating competitors to the punch".³ In line with existing academic evidence, we argue that EO enables solo entrepreneurs to more effectively navigate the business environment, ultimately contributing to higher performance outcomes (Rosenbusch et al., 2013).

Given the inherent temporal nature of entrepreneurship, in the present study we examine the link between present temporal focus and future temporal focus (PTF and FTF), and EO. We do so using a sample of 783 Dutch solo self-employed workers who run a business for their own account and risk, and who operate solo (without employing staff members)⁴. As solo self-employed workers are the sole driving force behind their business, firm and individual level notions of EO coincide.

We estimate a simple linear regression model with EO of solo self-employed workers as the dependent variable, and TF as the independent variable, while controlling for age, gender, level of education and type of industry. In addition to the separate effects of PTF and FTF, we also consider their interactive effect between the two foci and formulate two competing hypotheses to test whether both PTF and FTF are *complements* or *substitutes* in determining EO.

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2. According to CBS (Statistics Netherlands), the Netherlands has a relatively high rate of solo self-employed workers: across all European countries the Netherlands ranked 5th in 2022 with a solo self-employment rate of 12% (the highest being Greece with 20% solo self-employment rate).
 3. Later, Lumpkin and Dess (1996: p. 136) added autonomy and competitive aggressiveness as key practices that "managers use to act entrepreneurially".
 4. The term 'solo self-employed workers' differs from that of 'self-employed persons'; while the first operate solo, the latter may have employees. What we refer to as solo self-employed workers is labeled in other studies as independent contractors (Davis-Blake and Uzzi, 1993), own-account workers (Earle and Sakova, 2000) or freelancers (Van den Born and Van Witteloostuijn, 2013).

We find that both PTF and FTF of solo self-employed workers positively relate to their EO, and that this relationship is stronger for future focus. Our findings also suggest that these two temporal orientations act as substitutes rather than complements, in determining the EO of self-employed workers.

First, we advance the TF literature by investigating its relationship with EO, thus capturing the entrepreneurial approach of solo self-employed workers. We study the two separate effects of PTF and FTF as it is deemed important for those in charge of organizational processes (e.g., managers, entrepreneurs) to satisfy the current demands, while at the same time preparing for future challenges (Gibson and Birkinshaw, 2004; Jansen et al., 2005). By taking into account a combination of both PTF and FTF, we partake in the debate on the conceptualization and operationalization of the TF construct. Temporal focus is conceptualized by some scholars as a fixed (predominant) orientation on one of the extremes, i.e., either a past, present or future focus (Yadav et al., 2007; Kabanoff and Keegan, 2009); while other scholars assert that focusing on one period does not preclude thinking about the other (Shipp et al., 2009: p. 2). Although more and more scholars are acknowledging the multidimensionality of the temporal focus construct (Nadkarni and Chen, 2014), there is still limited knowledge of its implications, especially within the context of entrepreneurship.

Second, we contribute to the entrepreneurship literature by examining a rarely examined concept - the temporal nature of EO. Although the pursuit of an entrepreneurial strategy often calls for leaders who are capable of anticipating future outcomes (Foo et al., 2009) and adjusting their present behavior to take advantage of ‘unrealized potential’ (West and Meyer, 1997), only a few studies have focused on the relationship between time orientation and EO. For example, Zahra et al. (2004) tested the relation between EO and time orientation (proxied by the implementation of strategic or financial controls) in family and non-family firms. Lumpkin et al. (2010) discussed short-term and long-term perspectives of EO in relation to performance. Their study concluded that more research is needed, including empirical studies that test the direct links between a company’s time horizon for decision-making and EO. They made a call to focus future research on the “individual time orientations of key decision-makers” (p. 258). Our study contributes to the literature in several ways.

Finally, we study temporal focus and its relation with EO in a new empirical setting and context: that of solo self-employment. As researchers in entrepreneurship point out, contextualisation, i.e., situating a phenomena in a particular context, is important for the advancement of entrepreneurship research and to foster novel insights (Welter, 2011; Zahra et al., 2014). Our work contributes to the literature on temporality that pays attention to time as a contextualized construct (Lippmann and Aldrich, 2017; Miller and Sardais, 2015). Solo self-employment as a type of entrepreneurial venture has seen a worldwide increase in the current century (Beck, 2000; Hipple, 2010; Bhidé, 2000; Burke et al., 2018)⁵. The context of solo self-employment allows us to

examine the individual temporal orientation and its association with EO without the interference from team or organizational factors. Unlike small to medium sized business owners or managers within large organizations, solo self-employed workers have full managerial discretion; the distinction between the owner and the business dissappears in solo entrepreneurship, for which, there are no organizational constraints that can limit the influence of the manager (the solo self-employed worker) on the business strategy and/or performance (Hambrick and Mason, 1984; Hambrick, 2007)⁶.

2. Theory and Development of Hypotheses

2.1 The Concept of Temporality

Temporal decisions, behavior, and outcomes have been studied from the perspective of economics (Binswanger and Carman, 2012; Golsteyn et al., 2014; Ruffle and Tobol, 2014; Volk et al., 2012), strategic management (Das and Teng, 2001; Shi and Prescott, 2012; Souder and Bromiley, 2012; Van Doorn et al., 2013; Nandkarni and Chen, 2014; Nadkarni et al., 2015; Gamache and McNamara, 2019; Zhao et al., 2022), leadership (Halbesleben and Buckley, 2004; Bluedorn and Jaussi, 2008; Sasaki et al., 2024), organizational behavior (Mohammed and Harrison, 2013; Slocombe and Bluedorn, 1999; Levasseur et al., 2020), and entrepreneurship (Bluedorn and Martin, 2008; Lumpkin et al., 2010; Tumasjan et al., 2013; Wood et al., 2021; Berends et al., 2021; Gutierrez et al., 2023; Fremeaux and Henry, 2023).

The cognitive dimension of time has been conceptualized and measured in different ways. Shipp et al. (2009) provide a comprehensive overview of temporal constructs used in research, which includes temporal perspective, temporal depth, temporal focus, temporal orientation, and time attitude. Temporal focus has been defined as “the temporal direction of interest” (Bluedorn and Standifer, 2006: p. 201) or “the allocation of attention to the past, present, and future” (Shipp et al., 2009: p. 2). Unlike time orientation - which is a general disposition - temporal focus is context-dependent. Depending on the specific context in which

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5. Periods of economic downturn often lead to an increase in self-employment, as individuals involuntarily exit organizations and enter the freelance labor market, thereby intensifying competition for work (Biehl, Gurley-Calvez, and Hill, 2014; Burke, 2011; Carrasco, 1999; Moore and Mueller, 2002; Müller and Arum, 2004). However, considering self-employment as an underperforming or residual form of business is increasingly outdated. A growing number of individuals now engage in freelance work within highly skilled sectors, contributing to the “project economy.” In this context, they collaborate closely with both employees and other independent workers to deliver outputs that include innovative, scalable, exploratory, and risk-reducing activities (Burke and Cowling, 2020; Cielik and Van Stel, 2024).
 6. According to Hambrick (2007: p. 335): “upper echelons theory offers good predictions of organizational outcomes in direct proportion to how much managerial discretion exists. If a great deal of discretion is present, then managerial characteristics will become reflected in strategy and performance”.

individuals operate, their attention may shift across the past, present and/or future as a frame of reference for making decisions and/or fulfilling tasks (Shipp and Aeon, 2019). Scholars have related temporal focus to different organizational decisions, actions and outcomes including the way information is filtered and processed thus shaping the CEO's propensity to be influenced by media reaction (Gamache and McNamara, 2019); response to strategic change in technology-based ventures (West and Meyer, 1997); rate of new product introduction (Nadkarni and Chen, 2014); structuring of employees' work design (Zhao et al., 2022); exploration-exploitation activities (Tuncdogan and Dogan, 2020), and M&A investment activity (Gamache and McNamara, 2019; Desjardine and Shi, 2021).

The distinction between planning, short-term action and long-term action is closely connected to the concept of temporality as we will briefly touch upon in the next two paragraphs.

Planning and action have long been considered two fundamental (but often contradictory) strategies in managing organizations. For example, Mintzberg and Westley (2001) distinguished between a rational ('think first') and an action-oriented ('act first') approach to decision-making.⁷ There has also been considerable debate about the (relative) value of planning (requiring a long-time horizon) and action (requiring a short-time horizon) for successful entrepreneurship. In their meta-analysis, Brinckmann et al. (2010) summarized the debate about the importance of business planning for entrepreneurial performance. Emphasizing the action element in entrepreneurship, scholars have explored the importance of improvisation for new venture performance (Baker et al., 2003; Hmieleski and Corbett, 2008) and the relevance of non-deliberative impulse-driven behavior within the context of venture creation (Lerner et al., 2018). Sarasvathy (2001) proposes that the future cannot be predicted by writing plans, and that experienced entrepreneurs adopt an effectual (rather than a causal) approach and attempt to control the future by their own actions.

The distinction between short-term action and long-term planning appears essential for understanding the consequences of having a present focus or a future focus. Based on the inclination to prefer one time period over the other, future-oriented individuals can best be described as those who focus on (long-term) planning and goals, who take future consequences into account, and are likely to take action and procrastinate less (Kabanoff and Keegan, 2009; Shipp et al., 2009). Present-focused individuals, on the other hand, emphasize 'learning by doing' (or short-term planning), are motivated by feedback (prompted by behavior) (Kanfer and Ackerman, 1989) and have a preference for immediate rewards (Kabanoff and Keegan, 2009).

7. In addition, Mintzberg and Westley (2001) mention a third intuitive ('seeing first') approach.

2.2 The Temporal Nature of EO

Understanding the temporal challenges faced by solo self-employed workers is particularly critical given the resource constraints that characterize their ventures (Burke et al., 2018; Bhidé, 2000). These solo entrepreneurs are solely responsible for managing their businesses; they juggle tasks and responsibilities that vary in terms of urgency, thus necessitating the division of limited time between operational control and strategic decision-making, both of which have significant implications for their firm's future trajectory. Given the importance of balancing short-term goals (such as exploiting existing competences) and long-term goals (such as exploring new opportunities) for organizational performance (Gibson and Birkinshaw, 2004), it is important to understand how having a present and/or future focus influences solo entrepreneurs' EO, the latter being an orientation that combines activities that have both short-term and long-term implications. This is also important given the highly competitive economic landscape that increasingly puts pressure on businesses and enterprising individuals to pursue an entrepreneurial strategy that strikes the right balance between present and future goals (O'Reilly and Tushman, 2004).

It is customary in TF research to discriminate between past, present and future focus (Shipp and Aeon, 2019). In the present analysis we will not consider past TF. This decision is based on several key considerations. Taking a forward-looking perspective is commonly seen as the essence of entrepreneurship. Shane and Venkataraman (2000) highlight that entrepreneurship deals with the discovery, evaluation and exploitation of future goods and services. Similarly, McMullen and Shepherd (2006: p. 134) propose that entrepreneurial behavior requires "... a judgmental decision under uncertainty about a possible opportunity for profit". As a discipline, entrepreneurship fundamentally revolves around the creation of value and opportunities for the future (Shane and Venkataraman, 2000; Shane, 2003) by taking action in the present (Sarasvathy, 2001). As Berglund and Dimov (2023: p. 2) state: "much of our field has been framed in terms of a (dual) nexus of enterprising individuals and opportunities that represent determinate pathways to future entrepreneurial success, into which an individual's [current] actions hopefully tap". Entrepreneurs typically devote less time to ruminating over past failures or considering 'what could have been' (Baron, 2000), as their energy is channeled toward sustaining and growing their ventures in the present while creating opportunities for new products and services in the future. In the present study we, therefore, focus on understanding how Present TF and Future TF influence the entrepreneurial behavior of solo self-employed individuals.

To date, research has not explicitly investigated the link between TF and entrepreneurial orientation (EO), where EO refers to the behaviors, decisions and practices that drive the entrepreneurial strategy of a firm. However, studies have associated present and/or future temporal focus with individual dimensions of EO

separately, i.e., with risk-taking, proactiveness, innovativeness. In the remainder of this section, we discuss these relationships, and the commonality between each.

Risk-taking, defined as the extent to which managers in companies follow new strategies and support projects with risky returns (Venkataraman, 1989), entails taking bold (rather than cautious) actions such as venturing into unfamiliar markets, and extensive resource investments, to achieve goals (Lumpkin and Dess, 2001). Regardless of its precise definition, it appears that risk-taking involves foreseeing future outcomes while taking present actions that may or may not result in those outcomes. For instance, individuals may be willing to take financial risks in the present with the expectation of potential financial gains in the future (Shipp et al., 2009; Stewart and Roth, 2001). Theoretical work suggests that temporal perspectives can provide insight into varying risky behavior among entrepreneurs (Das and Teng, 1997). One example is the principle of discounted utility which posits that future benefits or costs are often devalued based on their temporal distance (Fredrick et al., 2002).

Proactiveness, “an opportunity-seeking, forward-looking perspective involving the introduction of new products and services ahead of competitors and acting in anticipation of future demand to create change and shape the environment” (Lumpkin and Dess, 2001: p. 431), has been linked to (new venture) managers’ future orientations, i.e., their preferential orientation toward events in the future (Sarasvathy, 2001), and their capability of “visualizing, comprehending, and grasping the distant future” (Das, 1987: p.205). Foo et al. (2009) argue that a future temporal focus fosters taking proactive behavior in the present. Grant and Ashford, (2008: p. 9) conceptualized such proactive behaviors as ‘future-focused,’ ‘mindful,’ and ‘acting in advance with foresight about future events before they occur’.

Innovativeness can be defined as: “the tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new products, services, or technological processes” (Lumpkin and Dess, 1996: p. 142). Yadav et al. (2007) found that a CEO’s temporal attention is an important antecedent of innovation outcomes. The more managers are focused on the future, the better are the innovation outcomes of the firm in terms of the speed of detecting new technological opportunities, developing new products, and the deployment breadth of innovations. Kabanoff and Keegan (2009) found that top teams’ future orientation is positively associated with their strategic focus on innovation. Emphasizing radical innovation outcomes, Chandy and Tellis (1998: p. 479) assert that managers with a future market focus are better informed about new and emerging technologies, less concerned with past investments in current technology, and are hence less inert. On the other hand, innovativeness of firms with a short-term perspective is more likely to be incremental in nature (Lumpkin et al., 2010). Finally, Nadkarni and Chen (2014) argue that in firms operating in stable environments, innovative performance is stimulated by a high present focus and low future focus, whereas in dynamic markets new products are

introduced faster if managers have both a high present and future focus. This study also shows how CEO's subjective temporal bias affects key strategic behavior of the firm.

To summarize, the three dimensions of EO appear to share their temporal nature; i.e., they require both a focus on what happens in the present, and on what might happen in the future. Indeed, research shows that entrepreneurs are generally endowed with the capability to integrate the distant future and the present in their goal setting and behavior (Bird, 1988; 1992; West and Meyer, 1997), which is an important condition for achieving venture success (Bird and West, 1998). Hence, we hypothesize that

Hypothesis 1a: Present temporal focus (PTF) is positively associated with EO of solo self-employed workers.

Hypothesis 1b: Future temporal focus (FTF) is positively associated with EO of solo self-employed workers.

The literature, however, argues that a future temporal focus is preferred for setting a strategic direction and keeping managers alert to new technologies, competitors and innovations (Yadav et al., 2007; Foo et al., 2009; Kabanoff and Keegan, 2009). Since individuals with a PTF prefer to act instead of deliberate, strategic decision making (i.e., promoting an entrepreneurial strategy) fits better with individuals whose future orientation (i.e., greater temporal distance) allows them to see the 'big picture' (Mohammed and Harrison, 2013). In addition, Lumpkin et al.'s (2010) work on family businesses show that, overall, a short-term focus is not beneficial for developing the different dimensions of EO, since a focus on adhering to the status quo makes it unlikely that entrepreneurs will engage/ invest in exploring risky new business opportunities. Moreover, experimentation (needed to achieve innovation) usually requires major resource investments and a longer time horizon before it pays off. We therefore hypothesize the following:

Hypothesis 2: Future temporal focus (FTF) is more strongly associated with EO of solo self-employed workers than present temporal focus (PTF).

2.3 Interaction of PTF and FTF

There are two contrasting perspectives on how people distribute their attention to different time periods, such as the present and the future. According to the first perspective, TF is seen as a single construct where PTF is located at one end of the continuum, and FTF on the other. In this perspective it is argued that individuals focus on one time period and can be classified accordingly (McGrath and Rotchford, 1983; Laverty, 1996; Holman and Silver, 1998; Harber et al., 2003; McKay et al., 2012). According to the second perspective, which is a more "liberal" scenario, individuals are assumed to focus predominantly but not exclusively on one of the different time periods. This alternative view argues that present and future temporal foci are unrelated and that individuals are able to shift

their attention between different time periods (Shipp et al., 2009; Shipp and Jansen, 2011). This allows for focusing on multiple periods (Yadav et al., 2007; Kabanoff and Keegan, 2009; Shipp and Jansen, 2011) and combining a high PTF with a high FTF. Based on the current state of the literature, we propose that a rigid dichotomy between temporal orientations, where individuals are either present or future focused may not be applicable. Instead, we suggest that TF reflects the distribution of attention across various temporal periods to varying degrees (Zimbardo and Boyd, 1999; Shipp et al., 2009). This interpretation of TP is linked to the concept of balanced time perspective which is born from the view that people are not constrained to any particular temporal orientation and that they feel most comfortable with a blended orientation. See Boniwell et al. (2010) for references. Below we formulate two competing hypotheses on how PTF and FTF may interact in relation to EO.

2.3.1 Substitution Effect

Within the field of management, the dilemma of intertemporal choice often involves decisions that are good in the short run, but not beneficial or even harmful in the long run (Laverty, 1996). In this regard, Marginson and McAulay (2008: p. 273) define a present focus as “a preference for actions in the near term that may have detrimental consequences for the long term”. Conversely, the “tendency to prioritize long range implications and impact of decisions and actions that come to fruition after an extended period of time” (Lumpkin et al., 2009: p. 56) can have negative consequences in the short run, if it puts pressure on the organization or streamlines its daily operations.

For solo self-employed individuals, combining a present focus (emphasizing daily operations) with a future focus (emphasizing future strategic opportunities) may restrict their level of EO. For example, building on current knowledge and thinking within existing paradigms can restrict creativity and ‘out-of-the-box thinking’, resulting in incremental improvements that stifle innovativeness in the long run (Finkelstein, 2005; Hambrick et al., 2005; Yadav et al., 2007). Furthermore, the cognitive demands of managing ongoing business activities may leave little room for generating viable new ideas or exploring future opportunities (Hambrick et al., 2005). Similarly, adopting a long time horizon may reduce the flexibility that is currently needed to initiate timely action to benefit from emerging opportunities (Leonard-Barton, 1993; Tripsas and Gavetti, 2000; Khurana, 2002; Finkelstein, 2005; Yadav et al., 2007). To test for a trade-off between PTF and FTF in explaining EO, we hypothesize the following:

Hypothesis 3a: PTF and FTF act as substitutes in determining the EO of solo self-employed workers.

2.3.2 Complementary Effect

The contextual ambidexterity literature proposes that venture performance improves when combining a focus on current business operations with an

emphasis on new business opportunities March, 1991; (Jansen et al., 2005; O'Reilly and Tushman, 2011). Within this context, daily operations may benefit from adopting a long-term perspective, for example through learning processes that enhances operational efficiency. Improved operations can subsequently free up resources enabling the exploration of new markets or the development of new business ventures. Similarly, one could argue that combining a PTF with a FTF may stimulate EO of solo self-employed workers. Within the realm of entrepreneurship it is commonly argued that anticipating and profiting from future entrepreneurial opportunities (requiring a FTF) is contingent on initiating activities in the present to pursue these opportunities (requiring a PTF) (Bird and West, 1998; Foo et al., 2009). Furthermore, several studies have demonstrated the complementarity of short-term and long-term focus in determining organizational as well as individual outcomes. For instance, having a long term perspective and engaging in planning helps individuals to take action (in the present) and reach their goals (Gollwitzer and Brandstätter, 1997). Delmar and Shane (2003) have shown that business planning fosters venture organizing activity by turning abstract plans in concrete operational steps. At the same time, a focus on the future should be combined with knowledge of the present, the latter indicating how the desired (future) outcome can best be reached (Bird and West, 1998). To test for synergies between PTF and FTF in explaining EO, we hypothesize the following:

Hypothesis 3b: PTF and FTF act as complements in determining the EO of solo self-employed workers.

3. Methodology

3.1 Data

To test our hypotheses, we use data from the Panteia/EIM Panel of solo self-employed workers in the Netherlands⁸. Data were collected through an Internet survey. A total of 2,554 solo self-employed workers were invited by e-mail to fill out the online questionnaire, of whom 820 (32%) participated. In the sample of 820 participants, the item non-response for our variables of interest is 4.51%. The final sample consists of 783 solo self-employed workers (27% female, M-age = 49.02; SD-age = 10.54). The participants took an average of 12.6 minutes (SD = 5.2 minutes) to complete the questionnaire, which consisted of 95 questions. Five randomly selected participants received a gift voucher of 50 Euro (about 55 US Dollars) for their participation.

8. Source: De Vries (2012). For technical details we refer to online documentation: <https://doi.org/10.17026/dans-xtw-htst> (in Dutch).

3.2 Measures

3.2.1 Entrepreneurial Orientation (EO)

In accordance with earlier research (Covin & Slevin, 1989; Miller, 1983), we conceptualize entrepreneurial orientation (EO) as a single construct. While various frameworks exist for defining and assessing EO, the three-component single construct perspective is widely recognized within the entrepreneurship literature (Covin and Wales, 2012; Rauch et al., 2009). Consistent with the findings of Clark et al. (2024), we adopt an individual-level perspective of EO, which is relevant for studying self-employed individuals who bear the sole responsibility for their company's strategic direction. To operationalize EO at the individual level, we utilize a Dutch translation of the 10-item instrument developed by Bolton and Lane (2012), which is grounded in the EO dimensions proposed by Lumpkin and Dess (1996) and Lumpkin et al. (2009), and adapted to the individual level. This measure has been validated in a substantial sample of students ($N=1,102$), demonstrating both internal consistency and adherence to the standards of internal and external validity (Bolton and Lane, 2012, p. 227-228). Additionally, satisfactory psychometric properties have been reported in a sample of entrepreneurs (Bolton, 2012).

After informing them of the purpose of the study, solo self-employed respondents were asked the following question: "Please indicate to what extent you agree to the following statements on your entrepreneurial attitude and functioning". Respondents assessed 10 items on a 5-point Likert scale (1= completely disagree to 5= completely agree). Sample items include: "I tend to act 'boldly' in situations where risk is involved" (risk-taking); "I usually act in anticipation of future problems, needs or changes" (proactiveness); and "In general, I prefer to use unique, one-of-a-kind approaches rather than revisiting tried and true approaches used before" (innovativeness).

To validate the Dutch measure of individual-level EO, we employed Exploratory Factor Analysis (EFA). The rotated factor matrix shows a three-factor solution (based on Eigenvalues > 1.0), clearly capturing the three underlying dimensions of EO: risk-taking, innovativeness and proactiveness. For simplicity and comparability across different studies, we continue with EO as one single construct and use the average score across the 10 items in further analysis. The Cronbach's alpha for this EO measure in our data sample is 0.82, which is comparable to that of 0.88 reported in Miller's (1983) seminal article, and represents a high level of internal consistency.⁹

3.2.2 Present and Future Temporal Focus (PTF and FTF)

We measure temporal focus with the measurement scale proposed by Shipp et al. (2009). This scale has been validated in several studies in the fields of

9. Cronbach's alphas for the three dimensions of EO (i.e., risk-taking, proactiveness, innovativeness) in our sample amount to 0.71, 0.79 and 0.76, respectively.

Management, OB and Psychology and has relatively strong validation properties compared to other scales used to capture temporal perspectives (Mohammed and Marhefka, 2020; Levasseur et al., 2020). We use EFA to assess whether the factor structure of the Dutch version of the measure aligns with the original English version. EFA demonstrates a two-factor solution, based on Eigenvalues > 1.0 , capturing PTF and FTF like the TF scale in Shipp et al. (2009). The Cronbach's alpha of PTF and FTF (0.85 and 0.89, respectively) indicate a strong internal consistency for both dimensions.

For the present study, we include two dimensions (PTF and FTF) from Shipp et al.'s (2009) scale. PTF and FTF are measured by four items each on a 7-point Likert scale (1 = completely disagree to 7 = completely agree). Sample items include: "I think about where I am today", "I live my life in the present" (representing PTF) and "I think about what my future has in store", "I focus on my future" (representing FTF). On average, the solo self-employed in our sample score 5.08 and 5.16 on PTF and FTF, respectively. Although similar mean scores have been reported among university students in the US in Shipp et al. (5.01 for PTF and 5.37 for FTF), this average is relatively high compared to other reported mean scores for PTF and FTF. To compare, mean scores for PTF and FTF were found in different samples, including fulltime employees in Peltokorpi et al. (2002) (3.80 and 3.68, respectively), Norwegian customers in Olsen et al. (2023) (4.46 and 4.27, resp.), Japanese university students in Chishima et al. (2017) (4.87 and 4.42, resp.), and Chinese CEOs of family businesses in Lu et al. (2022) (5.13 and 4.88, respectively).

3.2.3 Control Variables

In our analysis we control for sociodemographic factors that are considered important for explaining entrepreneurial behavior, including gender (e.g., Verheul et al., 2012; Langowitz and Minniti, 2007), age (e.g., Kautonen et al., 2014; Lèvesque and Minniti, 2006) and education level (e.g., Van der Sluis et al., 2008). To capture education level, we employ a discrete, ordered variable with values from higher to lower education levels; we distinguish between (1) University (of Applied Sciences); (2) Higher Level General Secondary or Pre-University Education; (3) Higher Level Vocational Education; (4) Medium Level Vocational Education; (5) Lower Level Vocational Education; and (6) Primary Education. We also include a set of venture-related variables including whether the solo self-employed workers sell goods or services, and ten industry dummies.¹⁰

10. Industry dummies include agriculture, manufacturing, construction, trade, transport, ICT, healthcare/wellness, education, B2B services, and other services. This classification builds on the Standard Industrial Classification of Statistics Netherlands (CBS), available via: <https://www.cbs.nl>. See Centraal Bureau voor de Statistiek (2008).

3.3 Statistical Analysis

We analyze the data in two steps. First, we present the bivariate correlations between the main variables of interest (see Table 1). Second, we perform a series of Ordinary Least Squares (OLS) regressions, and regress EO on (1) the controls; (2) PTF and FTF together with the control variables (Hypotheses 1 and 2); and (3) PTF and FTF, the interaction between the two temporal foci, and the control variables (Hypotheses 3a and 3b).

4. Results

4.1 Correlation Matrix

Table 1 presents the descriptive statistics (i.e., mean, standard deviation, and bivariate correlations) of the main variables of interest. The bivariate correlations are significant and positive between EO and both PTF ($r=0.2, p<0.05$) and FTF ($r=0.42, p<0.05$). We also see a positive correlation between PTF and FTF ($r=0.24, p<0.05$). This may be related to the fact that present actions of freelancers can directly shape future outcomes. Furthermore, successful self-employed individuals may be ambidextrous, balancing vision and execution.

Table 1. Pearson’s correlation matrix

	Mean	SD	1	2	3	4	5	6	7
1 EO	10.5	1.9	1						
2 PTF	5.1	1.2	0.2**	1					
3 FTF	5.2	1.1	0.42**	0.24**	1				
4 Age	49.0	10.5	0.06	0.04	0	1			
5 Gender (female=1)	0.3	0.4	-0.12**	0.13**	-0.03	-0.02	1		
6 Level of education	2.3	1.4	-0.05	0.02	0.02	0.01	-0.19**	1	
7 Goods/services (services=1)	0.2	0.4	0	-0.05	0	0.06	-0.11**	0.12**	1

Note: N = 783; ** $p<0.05$.

4.2 Regression Analysis¹¹

Table 2 presents the OLS regression analyses of both PTF and FTF together with their interaction on EO. We find no multicollinearity issues as the tolerance statistics are in excess of 0.2 (Menard, 1995). In line with Hypotheses 1a and 1b, we find that both PTF and FTF are positively associated with EO (see Model 2 in Table 2). In addition, we find that FTF has a stronger relation with EO ($\beta = 0.64, p<0.01$) than PTF($\beta = 0.20, p<0.01$). This provides support for Hypothesis 2. Furthermore, to test whether PTF and FTF act as substitutes or complements in determining EO, we examine the interaction effect of the two temporal foci (see

Model 3 in Table 2). We find that the interaction term is significant and negative ($\beta = -0.10, p < 0.01$), indicating that the two temporal foci act as substitutes rather than as complements (Hayes, 2013) with respect to EO. Thus, Hypothesis 3a is supported and Hypothesis 3b is not supported.

Table 2. Regression analyses for Entrepreneurial Orientation (EO)

	Entrepreneurial Orientation		
	(1)	(2)	(3)
PTF		0.20***	0.71***
FTF		0.64***	1.14***
PTF*FTF			-0.10***
Age	0.01	0.01	0.01
Gender (female=1)	-0.56***	-0.53***	-0.53***
Level of education	-0.08	-0.10*	-0.09*
Goods/services (services=1)	0.06	0.06	0.09
Agriculture#	-0.66**	-0.41	-0.42
Manufacturing#	-0.23	-0.18	-0.17
Construction#	-0.51	-0.52*	-0.49*
Trade/hospitality/repair#	-0.35	-0.17	-0.14
Transport/storage/communications#	-0.23	0.05	0.08
ICT#	-0.42	-0.02	-0.04
Healthcare/wellness#	-0.49*	-0.36	-0.36
Education/training#	-0.27	-0.14	-0.13
Other services#	-0.05	0.12	0.14
Constant	10.65***	6.22***	3.62***
R-squared	0.03	0.22	0.23
F-test	2.11**	14.16***	13.90***

Note: Standard errors in parentheses, N=783, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

B2B services (category 7) is the reference category.

11. In line with the view that the dimensions of EO can vary independently from each other (Lumpkin and Dess, 1996) and may therefore differ in terms of their temporal nature, we also performed the regression analysis separately for each of the dimensions of EO (i.e., risk-taking, proactiveness and innovativeness). These results can be obtained from the authors upon request. Summarizing, we find that the results are quite similar, except that we do not find evidence for an effect of present temporal focus and the interaction term on risk-taking. Although Shipp et al. (2009) find that present temporal focus is strongly related to risk-taking. The focus here is on short-term thrill-seeking aspects of risk-taking (Jackson et al., 1972), whereas we argue that within the specific context of solo self-employment risk-taking is associated with future returns and taking calculated risks to build up a sustainable long-term venture rather than with a focus on short term gains (Das and Teng, 1997).

5. Discussion

Time and time-sensitive processes are crucial in entrepreneurship. Time influences the timing of startup decisions, growth strategies, and market entry; time is in fact one of the most valuable resources of the entrepreneur (Zachary et al., 2015). Research focusing on the role of time in entrepreneurship may enhance our comprehension of the field, offering insights rooted in a practice-based approach that recognizes the inherent variability and dynamic nature of entrepreneurial uncertainty (Lèvesque and Stephan, 2020). Entrepreneurship scholars have reflected upon the importance of how time is perceived, because paying close attention to time and its effects on individual entrepreneurs, their businesses, and their environments can help scholars develop a deeper understanding of the entrepreneurial process, from individuals choosing an entrepreneurial path to policymakers aiding in the creation and expansion of new ventures (Lèvesque and Stephan, 2020). Our study which investigates the temporal focus of solo self-employed workers and its association with EO, contributes to this direction of enquiry.

Our findings indicate that both PTF and FTF are positively related to EO of solo self-employed workers, but that the relationship of FTF with EO is stronger. Thus, our study provides evidence that for solo self-employed workers, the pursuit of an entrepreneurial strategy requires a strong future focus. As past research indicates, a focus on the future may be favorable for strategic planning, which may play a critical role in reducing stress of entrepreneurs (Das, 2006; Bluedorn and Martin, 2008). Arguing that individuals can allocate their attention to different time periods (Shipp et al., 2009), and are therefore able to combine a high PTF with a high FTF, we tested two competing hypotheses with respect to how these foci interact in relation to EO. The negative interaction term of our regression analysis indicates that PTF and FTF act as substitutes in determining the EO of solo self-employed workers. This substitution effect may be explained by the limited resources (e.g., time, energy, attention, money) solo self-employed workers are able to allocate to the present and future of their enterprise. For instance, research indicates that solo self-employed workers earn significantly less than self-employed individuals with employees, for which there is a need to differentiate this category of self-employment in entrepreneurship research (Berrill et al., 2021). Whereas combining a focus on current business operations with future opportunities is acute for all entrepreneurial ventures in today's competitive environment (Gibson and Birkinshaw, 2004), it may be more difficult for solo entrepreneurs, who are exclusively responsible for coordinating all aspects of the business, and who tend to work long hours to meet deadlines or engage in trouble shooting (Bhide, 2000; Burke et al., 2018). Therefore, they run the risk of investing too little to *both* the present and future of their enterprise to create an impact in terms of EO. Previous research demonstrates that self-employed workers perceive more time constraints than employees within

organizations (Hyytinen and Ruuskanen, 2007). Although one might assume that resource scarcity and uncertainty - both salient in the entrepreneurial process for solo self-employed workers - would lead them to prioritize survival in the present, our study reveals that FTF is associated with a higher EO among solo self-employed workers. We believe that this is a novel and important contribution to the current literature on temporality and that on temporality in entrepreneurship.

5.1 Theoretical Implications

Consistent with the perspective of previous research (Shipp et al., 2009; Wales et al., 2013; Nadkarni and Chen, 2014) which indicates that TF is a cognitive factor important to management scholarship, and particularly to research in entrepreneurship (see the 1998 ETP special issue, Vol. 22, No. 2, on ‘Time and Entrepreneurship’), we explored the link between TF and EO. In doing so, we contribute to the recent literature on psychological time in entrepreneurship (Lêvesque and Stephan, 2020, Levasseur et al., 2024). Our work also contributes to the literature stressing the importance of cognitive factors in explaining entrepreneurship-related phenomena. Although cognitive studies within the context of entrepreneurship have gained momentum, research focusing on the relation between cognitions and EO remains scarce (Wales et al., 2013). The context of solo self-employment in the present study allows us to directly translate individual level (temporal) cognition into organizational behavior (Hambrick and Mason, 1984; Hambrick, 2007).

Furthermore, our results contribute to understanding the implications of the TF construct (Kreiser et al., 2013; Shipp et al., 2009; Shipp and Jansen, 2011) in the entrepreneurial context (Lumpkin and Brigham, 2011). Entrepreneurial scholars have recently pointed out that “time and time sensitive processes play a key role in entrepreneurship” (Lêvesque and Stephan, 2020: p. 164). Specifically, and consistent with previous studies that stress the importance of a FTF in determining life and organizational outcomes (Golsteyn et al., 2014; Kabanoff and Keegan, 2009; Yadav et al., 2007), we find that FTF is more strongly related to EO than PTF. Our study thus contributes to the entrepreneurship literature by demonstrating the relative importance of a future orientation for achieving EO within the context of resource-constrained and solo operating entrepreneurs.

Finally, we identified that there is a balanced time perspective. Such a perspective may be born from the view that people are not constrained to any particular temporal orientation and that they feel most comfortable with a blended orientation (Boniwell et al., 2010). We analysed this perspective using the interaction between PTF and FTF. And indeed, our findings show that PTF and FTF act as substitutes in shaping EO. This finding also aligns with existing literature suggesting the inherent difficulty of balancing present operations while simultaneously identifying future business opportunities (O’Reilly and Tushman, 2004). This difficulty is particularly salient for solo self-employed workers. In contemporary work environments, there is a tendency to emphasize short-term

priorities, which necessitates a higher focus on the present (Hamermesh and Lee, 2007; Lavery, 1996; Prahalad and Hamel, 1994; The Economist, 2014). However, time is perceived and managed differently across industries, with varying temporal rhythms influencing both market entry and time management strategies. These factors, in turn, shape entrepreneurial opportunities and the nature of entrepreneurship across different contexts. Our research demonstrates that, for solo self-employed workers, organizational strategy formulation requires a distinct focus on future opportunities, emphasizing the importance of FTF in their entrepreneurial success.

5.2 Practical Implications

The present study has important implications for how solo self-employed workers manage their business, and provides key insight for understanding the evolution of their ventures, especially for those who struggle to manage their venture's growth. Our findings indicate that solo self-employed workers may be better off focusing on the future (than on the present), given that we find that the link with EO is stronger for FTF than for PTF. Thus, these entrepreneurs could benefit from having a clear vision and invest in the realization of that vision rather than having day-to-day routines absorb the bulk of their resources. Indeed, research shows that solo self-employed workers who are involved in future-oriented activities, such as innovation processes, benefit from cooperation with other organizations (De Vries and Koster, 2013). Several benefits of cooperation exist, yet for successful innovation the key benefit is access to new resources and knowledge. Therefore, broadening the scope of the enterprise by cooperating with partners who bring in complementary skills and competences (scope effects), leads to higher (long term) performance than working together with solo self-employed workers involved in similar activities (scale effects) (Koster and De Vries, 2011). The substitution effect of PTF and FTF on EO suggests that solo self-employed workers lack a critical mass (scale) to simultaneously pursue short-term and long-term entrepreneurial goals and should either focus on 'one of the two' or increase their scale through cooperation with other entrepreneurs or companies. The coaching of time management should take into account this 'one of the two' principle, in particular for those who struggle to increase their scale in the context of a long-term orientation.

As solo self-employed workers have full managerial discretion, it is important that they remain aware of the importance of having a FTF to maintain their EO. As a cognitive characteristic, individuals' TF may be malleable and reinforced by training (Golsteyn et al., 2014). For example, solo self-employed workers may benefit from following error management training that enhances their meta-cognitive abilities (Keith and Frese, 2005), enabling them to effectively focus on the future, while attending to the (minimum) needs of the present. Mindfulness training could be also useful, whereby solo entrepreneurs deliberately practice to

achieve a present moment awareness, for enhancing attention and cognition (Moder et al., 2023).

5.3 Future Research

Our study highlights several future research opportunities. First, given our finding that PTF and FTF act as substitutes in determining EO for solo self-employed workers, it would be of interest to find out to what extent the scale of business operations facilitates a complementary effect, and the role played by organizational factors in determining EO. If indeed the scale of operations and available resources matter for PTF and FTF to act as complements or substitutes, future studies could examine the temporal nature of EO in different contexts including self-employed with employees, entrepreneurial teams, small and medium-sized enterprises (SMEs), and large multinationals. As managerial discretion declines within these contexts, it is important to operationalize EO at the organizational level. Second, although our results suggest that TF is associated with EO, we did not examine the link with entrepreneurial success, which future research could investigate. Given that EO has an important link with performance (Lumpkin and Dess, 1996, 2001; Rauch et al., 2009), TF could also play a role in facilitating entrepreneurial performance and new venture development. Third, as suggested in several studies (Lumpkin and Dess, 1996; 2001; Richard et al., 2004), the associations between cognition and EO may enrich our understanding of entrepreneurship. Special attention should be devoted to different contingencies underlying the relation between TF and entrepreneurship-related phenomena (Wales et al., 2013). Possible moderators may include cognitive factors that interfere with having a long-term strategic perspective, such as a dynamic business environment or perceived time pressure. Finally, future research could investigate concepts such as organizational ambidexterity (Benner and Tushman, 2003; Jansen et al., 2005) and effectuation versus causation (Sarasvathy, 2001) from a TF perspective.

5.4 Limitations

The present study may suffer from two limitations. *First*, our results may be subject to common method bias (Conway and Lance, 2010; Podsakoff and Organ, 1986). To assess the level of common method variance in our dataset, we employed Harman's single-factor test (Podsakoff and MacKenzie, 2003). From the 33 individual items used in our regressions, we extracted 14 factors that account for 72 percent of the variance in our dataset. The first extracted factor has an eigenvalue of 5.42 and accounts for 16.45 percent of the variance in our dataset. We conclude that the extent of common method variance in our dataset is low thus reducing the likelihood of common method bias (Podsakoff and MacKenzie, 2003).

Second, a potential limitation of the present study is the EO construct based on the measurement scale of Bolton and Lane (2012). This scale consists of 10

items reflecting the three dimensions of EO, viz., risk-taking, proactiveness and innovativeness. The confirmatory factor analysis shows that these 10 items do not load well on one latent construct. It is likely that EO consists of three separate dimensions that vary independently of each other and should be separated rather than taken together in one construct. For this reason, we also analyzed the associations between the temporal foci and the three separate dimensions of EO. These results were similar to those for the overall construct of EO, which makes us believe that the results presented in this study are reliable and not driven by one specific dimension.¹² Future research may focus on uncovering whether EO (captured at the individual level) is a first-order construct, a second order construct, and/or to what extent these dimensions are able to vary independently of each other (Lumpkin and Dess, 1996, 2001).

6. Conclusion

The concept of time is fundamental to many scientific disciplines, each offering unique perspectives on its nature and measurement. In physics, time is often treated as a continuous, objective dimension, either as a constant independent of the observer (Newtonian time) or as a relative construct influenced by factors such as gravity and velocity (Einsteinian time). In psychology however, time is understood through subjective frameworks, such as individual time perspectives, which vary among individuals and impact their psychological functioning and life outcomes. Zimbardo and Boyd (1999) introduced a framework of psychological time that distinguishes between past, present, and future orientations, each of which is associated with distinct personality traits and behaviors. For instance, using a language-based assessment, Park et al. (2017) found that future-oriented individuals tend to be older, female, more conscientious, less impulsive, less depressed, and more satisfied with life compared to those with a present orientation focus.

Despite the crucial role of psychological time in organizational life, management scholarship “often treat time as the background” (Sadeghi et al., 2024: p. 2). Our empirical study puts psychological time (temporal focus) at the forefront of investigation, in order to better understand its relationship with the processes, practices, and decision-making styles of solo self-employed workers, as measured by entrepreneurial orientation (EO). Our findings reveal that for solo self-employed workers, both PTF and FTF are positively related to their EO, although this relationship is stronger for a future focus. We also find that there is a substitution effect between the two temporal foci.

Entrepreneurship is a dynamic, complex and contextual journey shaped not only by objective measures of time but also by subjective perceptions of

12. The separate results for the three dimensions of EO are available from the corresponding author of the present paper.

psychological time. Clearly, the two dimensions of time are far from independent. Objective time (represented by the clock) governs the passage of measurable time (duration), which can be captured in terms of episodes imbued with psychological meaning. We urge future research to closely examine the role of psychological time in different contexts, stages, and types of entrepreneurship, and to explore its relationships to critical constructs in entrepreneurship research through different methodological approaches. It is high time we stop taking ‘time’ - both objective and psychological - for granted in entrepreneurship research.

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Statements and declarations:

Ethical considerations: Panteia is committed to high standards in research, including adherence to privacy regulations (e.g., GDPR). They follow ethical guidelines related to privacy and data protection as part of their research practices. For more information, contact Panteia via info@panteia.nl or at +31-79-3222000.

Consent to participate: Panteia follows standard informed consent procedures to ensure that participants are fully aware of the purpose of the research, how their data will be used, and their right to withdraw from the study at any time. This is in line with ethical research practices and the legal requirements under GDPR. See Panteia's privacy statement (in Dutch): panteia.nl/bestanden/privacy-statement-panteia-nl-2022-pdf/

Consent for publication: For our study the authors received a fully anonymized data set from Panteia; the authors have no information about individual data with which they can identify participants.

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Data availability: The data that support the findings of this study are available from the corresponding author upon reasonable request. The original data of the Panteia Panel of Solo Self-employed are openly available via: <https://ssh.datastations.nl/dataset.xhtml?persistentId=doi:10.17026/dans-xtw-htst> (in Dutch) under the following license agreement: https://dans.knaw.nl/wp-content/uploads/2022/01/DANS_Licence_EN.pdf

In line with the view that the dimensions of EO can vary independently from each other (Lumpkin and Dess, 1996) and may therefore differ in terms of their temporal nature, we also performed the regression analysis separately for each of the dimensions of EO (i.e., risk-taking, proactiveness and innovativeness). These results can be obtained from the authors upon request. Summarizing, we find that the results are quite similar, except that we do not find evidence for an effect of present temporal focus and the interaction term on risk-taking. Although Shipp et al. (2009) find that present temporal focus is strongly related to risk-taking. The focus here is on short-term thrill-seeking aspects of risk-taking (Jackson et al., 1972), whereas we argue that within the specific context of solo self-employment

risk-taking is associated with future returns and taking calculated risks to build up a sustainable long-term venture rather than with a focus on short term gains (Das and Teng, 1997).