

ORIGINAL RESEARCH ARTICLE

Understanding Entrepreneurial Commitment: A Test of Side-Bet Theory

Laëtitia Gabay-Mariani^{1*} and Saulo Dubard Barbosa²¹KEDGE Business School, Paris, France²Emlyon Business School, Lyon, France**Abstract**

This paper contributes to the burgeoning literature on entrepreneurial commitment by providing a first empirical investigation of Howard Becker's side-bet theory in the context of nascent entrepreneurship. We investigate how different forms of commitment relate to both entrepreneurial behavior and various side-bet categories: satisfying conditions, non-work concerns, others' expectations, impersonal bureaucratic arrangements, perceived lack of alternatives, individual adjustments to social positions, and self-presentation concerns. We collected data from a representative sample ($n=242$) of individuals granted with the French national student-entrepreneur status (NSES). Results from hierarchical linear regressions reveal different patterns of side bets associated with entrepreneurial commitment, depending on its nature (value-based or exchange-based) and on its focus (the project or the profession). Our study (1) extends side-bet theory to the field of entrepreneurship and (2) improves understanding of factors associated with commitment during the volitional phase of the entrepreneurial process.

Keywords: *Entrepreneurial process; Commitment; Side-bet theory; Volition; Nascent entrepreneur; Student entrepreneur*

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Entrepreneurship has been a salient career option across many countries for several decades (Carroll & Mosakowski, 1987; Thornton, 1999). Indeed, a significant number of individuals consider starting and do start their own business at some point in their lives (e.g., Reynolds et al., 2002), and at any point in time, a significant part of the adult population is involved in either setting up a business or managing a new business (e.g., GEM, 2022).¹ The salience of this career option is often reinforced by policy-makers and higher education institutions, which dedicate a significant amount of resources to encouraging and supporting entrepreneurship, sometimes with questionable results (Acs et al., 2016; Åstebro et al., 2012; Bergmann et al., 2016, 2018; Laffineur et al., 2017). In light of significant investment at national and university levels to foster nascent entrepreneurship, it is important to understand what drives individuals to fully become entrepreneurs.

To this end, however, extant research has been limited and unbalanced: most studies have examined the motivational phase of the entrepreneurial process, where individuals form their intentions to create their own business, often neglecting the volitional phase in which nascent entrepreneurs implement their intentions (Fayolle & Liñán, 2014; Van Gelderen et al., 2015, 2018). Crossing this "rubicon" from intention to implementation is crucial for the rest of the founding process (Delanoë-Gueguen & Fayolle, 2019; Tornikoski & Renko, 2014). Yet, we are still exploring why some individuals cross this "rubicon", whereas others give up or are perpetually still trying (Carter et al., 1996).²

One promising area of study that may shed light on when and why nascent entrepreneurs move from intention to implementation is around the notion of commitment (e.g., Adam,

¹ Based on a series of surveys in 47 countries, the Global Entrepreneurship Monitor (GEM) 2021/2022 Global Report estimates that the percentage of the adult population (aged 18–64) involved in either setting up a business or managing a new business (up to 3.5 years old) varies from 2% in Poland to 41.9% in the Dominican Republic, with a global mean of 13.54%.

*Corresponding author: Laëtitia Gabay-Mariani, Email: laetitia.gabaymariani@kedgbe.com

² Carter et al. (1996) were among the first scholars to follow nascent entrepreneurs over time and point to the existence of three groups: those who move to implementation and start a business, those who give up and those who continually say that they are still trying. Since their study, research on the motivational phase of entrepreneurial intentions has grown exponentially, while research on the volitional phase still lags behind (Fayolle & Liñán, 2014; Van Gelderen et al., 2018).

2016; Adam & Fayolle, 2015; Van Gelderen et al., 2015). Although conceptualizations of entrepreneurial commitment have been around for a long time (e.g., Bruyat, 1993; Fayolle et al., 2011), more systematic efforts for empirical investigation are relatively recent (Adam & Fayolle, 2015; Adam & Gabay-Mariani, 2021; Gabay-Mariani & Boissin, 2021). These empirical studies have generally built upon the literature on organizational commitment (e.g., Allen & Meyer, 1990; Meyer & Allen, 1991), adapted existing measurement instruments, and shown that nascent entrepreneurs exhibit diverse commitment profiles that are associated with different levels of personal investment in the entrepreneurial process (e.g., Gabay-Mariani & Boissin, 2021). Nonetheless, such studies remain silent on the factors explaining the development of these diverse commitment profiles.

To deepen research on the potential factors related to entrepreneurial commitment, we revisit Howard Becker's seminal work (Becker, 1960). We discuss how his side-bet theory could improve our understanding of entrepreneurial commitment and empirically investigate how different side bets relate to distinct types of entrepreneurial commitment among student nascent entrepreneurs. In so doing, we build upon previous literature on organizational and entrepreneurial commitment and adopt a multidimensional and multi-focus view of the latter. Specifically, we theorize upon and empirically examine how distinct side bets are related to either value-based or exchange-based forms of the commitment that student nascent entrepreneurs exhibit relative to their nascent businesses and to their entrepreneurial careers. To the best of our knowledge, our study constitutes the first attempt to integrate side-bet theory into entrepreneurial commitment research.

Theoretical background and hypothesis development

Social psychologists studying how individuals transition from intention to behavior generally distinguish a *motivational* phase – the moment when individuals decide which of their desires they want to pursue – from a *volitional* phase – in which they exert willpower to translate these goals into actions (Ajzen et al., 2009; Gollwitzer, 1990). In this latter volitional phase, the notion of commitment takes a central role, connecting intentions to actual behavior, given that “equally favorable intentions may be accompanied by different degrees of commitment to the intended action” (Ajzen et al., 2009, p. 1359).

Entrepreneurship scholars have echoed this distinction and called for the investigation of nascent entrepreneurs' commitment profiles to better understand the volitional phase of the entrepreneurial process (Fayolle & Liñán, 2014; Van Gelderen et al., 2015). They argue that in the motivational phase, nascent entrepreneurs adopt a deliberative mindset: they set goals based on generic and abstract assessments of the feasibility and

desirability of their available options (Boissin et al., 2009; Krueger & Casrud, 1993). In the volitional phase, these entrepreneurs strive to implement and align these goals with reality, which involves self-regulation processes that can prevent individuals from acting, unless they exert willpower and unfold perseverance strategies to overcome difficulties arising along the way (Van Gelderen, 2012; Van Gelderen et al., 2015). In this phase, the nature and level of one's commitment can make all the difference between those who persist and move forward in the entrepreneurial process and those who stop and give up.

Nonetheless, the very concept of commitment is subject to debate, and its empirical assessment is permeated with methodological challenges. Industrial psychologists and organizational scholars generally converge to view commitment as “a force that binds an individual to a course of action of relevance to one or more targets” (Meyer & Herscovitch, 2001, p. 301) but diverge in their models of commitment and particularly in the nature and number of commitment dimensions (e.g., McGee & Ford, 1987; Meyer & Allen, 1991; Meyer et al., 2006; Powel & Meyer, 2004; Shore et al., 2000; Stinghamer et al., 2002). Because their focus is on organizational commitment and on understanding what binds employees to the organizations they work in, we believe that revisiting Becker's (1960) original “notes on the concept of commitment” may be more enlightening for entrepreneurship scholars willing to study *entrepreneurial* commitment.

Distinguishing commitment from behavior and establishing types of entrepreneurial commitment

Becker's (1960) notes were unconcerned with a particular type of commitment, as they intended to offer a tentative theory of commitment that would help sociologists “account for the fact that people engage in *consistent lines of activity*” (p. 33). To do so, it was important for Becker to avoid the tautological trap in which commitment is inferred from the very behavior it tries to explain. This is the starting point for his side-bet theory, in which commitment is achieved by making a side bet – by involving other interests, originally extraneous to the focal action, directly in that action. A side bet is therefore an extraneous interest, originally unrelated to a course of action, which has been tied to it.

Before we turn to specific side bets and how they might relate to entrepreneurial commitment, it is important to follow Becker's (1960) insight and avoid inferring entrepreneurial commitment from entrepreneurial behavior. For example, although entrepreneurial commitment is likely related to the execution of gestation activities leading to the creation of a new business, the execution of the latter constitutes observable behavior and not commitment per se. In fact, high levels of entrepreneurial commitment may contribute to the execution of gestation activities,

reinforcing this consistent line of activities toward venture creation, but the very execution of these activities may recursively reinforce, or sometimes weaken, entrepreneurial commitment. This distinction between commitment and behavior is the very basis of our first hypothesis below.

What then constitutes entrepreneurial commitment? We draw upon previous entrepreneurship and organizational research and adopt a two-component model that distinguishes value-based and exchange-based commitment (Gabay-Mariani, 2022; Gabay-Mariani & Adam, 2020; Meyer et al., 2006). Value-based commitment can be defined as an affective type of commitment that corresponds to an emotional relationship based on an identification process and an internalization of values. Exchange-based commitment can be defined as an instrumental type of commitment that corresponds to a broad sense of perceived costs, whether financial, material, social or personal. The distinction between value-based and exchange-based commitment draws upon the literature on psychological contracts and parallels the distinction between relational and transactional contracts (Rousseau, 1989, 1990; Rousseau & Parks, 1993). This distinction also encompasses an extensive literature on organizational commitment suggesting that the three-component model initially proposed by Meyer and Allen (1991) may actually factor in this dual conception of commitment, with value-based commitment including “affective commitment and that aspect of normative commitment that reflects obligation to achieve valued outcomes” and exchange-based commitment including “continuance commitment and that aspect of normative commitment that reflects an obligation to meet others’ expectations” (Meyer et al., 2006, p. 673). Indeed, the adaptation of Meyer and Allen’s model to entrepreneurship also led to a reformulation of some of its dimensions. Gabay-Mariani (2022) developed a scale of entrepreneurial commitment and highlighted the lack of dimensionality of normative commitment among nascent entrepreneurs (a finding that echoes Gellatly et al., 2006). This line of research (Gabay-Mariani, 2022; Gabay-Mariani & Adam, 2020) endorses the two-component model of value-based and exchange-based commitment that we adopt in our study.

In addition to this dual view, the definition of commitment also implies specifying the targets (or *foci*) toward which it is directed (Meyer & Herscovitch, 2001). Recent studies agree on two main ones: the entrepreneurial project and the entrepreneurial profession, defined as a set of practices, know-how and hard and soft skills inherent to the activity of creation and emergence (e.g., Adam & Fayolle, 2015; Gabay-Mariani & Boissin, 2019, 2021; Valéau, 2017). This view is consistent with Bruyat and Julien’s (2001) definition of entrepreneurship as a process of change and value creation for both the project and the individual who is undertaking the project and becomes an entrepreneur through it. This view is also consistent with a career perspective of entrepreneurship (Carroll & Mosakowski, 1987; Thornton, 1999). Thus, in our study, we investigate how side bets are related to both value-based and exchange-based commitment at the levels of the project and the profession (as summarized in Figure 1).

Thus, turning back to the distinction that Becker (1960) clearly makes between commitment and the “consistent lines of activity” that it is supposed to explain, and adapting it to the context of entrepreneurial commitment, our baseline hypothesis is that the actions of nascent entrepreneurs toward venture creation are related to, yet distinct from, their commitment. Specifically, we hypothesize that consistent execution of gestation activities – defined as activities leading to the emergence of a new business – is related to high levels of both value-based and exchange-based commitment vis-à-vis both the entrepreneurial project and the entrepreneurial profession.

Hypothesis 1: The number of gestation activities initiated is positively related to nascent entrepreneurs’ value-based commitment to (a) their entrepreneurial project and (b) their entrepreneurial profession, as well as to nascent entrepreneurs’ exchange-based commitment to (c) their entrepreneurial project and (d) their entrepreneurial profession.

Side bets and entrepreneurial commitment

Becker’s goal with his side-bet theory was to provide an account of commitment that is “independent of the behavior commitment

Focus Nature	Project	Profession
value-based	perceived congruence between the individual and his/her project	perceived congruence between the individual and an entrepreneurial status
exchange-based	perceived costs associated with stopping the project	perceived costs associated with going back to wage-earning

Source: Own elaboration.

Figure 1. Dimensions of commitment included in the present study

will serve to explain" (1960, p. 35). To do so, he considers that individuals' commitment to a consistent line of activity is derived from the accumulation of side bets, that is, the involvement of extraneous interests in that course of action, which are not necessarily made consciously and deliberately by the individual.

"Some commitments do result from conscious decisions, but others arise *crescively*; the person becomes aware that he is committed only at some point of change and seems to have made the commitment without realizing it" (Becker, 1960, p. 38).

This ability of side-bet theory to "explain situations where a person finds that his involvement in social organization has, in effect, made side bets for him and thus constrained his future activity" (Becker, 1960, p. 36) makes it particularly interesting for the study of nascent entrepreneurs' commitment. For, even though entrepreneurship has been largely portrayed as a planned behavior in its motivational phase (Krueger & Casrud, 1993; Krueger et al., 2000), to the best of our knowledge, there is no evidence that commitment in the volitional phase is entirely made in a deliberative and conscious way. Rather, anecdotal evidence suggests that many nascent entrepreneurs test the waters before jumping and may indeed commit *crescively*. We suggest that this entrepreneurial commitment has an affective dimension (value-based commitment) as well as an instrumental one (exchange-based commitment), and that each dimension may be related to different categories of side bets.

In his seminal work, Becker (1960) described five side-bet categories but suggested the list was non-exhaustive. Powell and Meyer (2004) proposed two additional side-bet categories that we also integrate into our study. Specifically, we theorize and empirically investigate how each of these side-bet categories differentially relate to value-based and exchange-based commitment.

Side bets associated with value-based commitment

Value-based commitment is affective and emotional in nature, generally corresponding to a process in which the individual identifies with a consistent line of action, internalizes values from this identification process, and feels constrained to achieve valued outcomes of that course of action (Meyer et al., 2006). It generally corresponds to a relational psychological contract in the organizational commitment literature (Rousseau, 1989, 1990; Rousseau & Parks, 1993).

Although value-based and exchange-based types of commitment are related to each other (Gabay-Mariani, 2020; Gabay-Mariani & Adam, 2020; Meyer et al., 2006), we identified two categories of side bets that are more clearly associated with value-based commitment: satisfying conditions and non-work concerns.

Satisfying conditions

A first type of side bet that we hypothesize to be related to value-based commitment is *satisfying conditions*. Satisfying conditions refer to the interest and pleasure felt in a professional situation, that is, the positive experience individuals feel when working (Powell & Meyer, 2004). Because affective commitment is generally influenced by positive experiences at work, through feelings of comfort and competence (Allen & Meyer, 1990), satisfying conditions must be positively related to value-based commitment because the work is perceived as interesting, fulfilling and enjoyable.

Although the notion of satisfying conditions has been studied mostly in the literature on organizational commitment, some studies suggest it can also be applied to entrepreneurship. For example, several studies suggest that workplace characteristics affect the supply of entrepreneurs in society, through both push and pull mechanisms (Lee & Venkataraman, 2006; Sørensen, 2007). Looking at occupational characteristics, Laffineur et al. (2020) theorized and found evidence that nascent entrepreneurs who faced arduous working conditions and lacked personal accomplishment in their previous wage jobs were more committed to their new business and put more effort into it. These individuals seem to have found more satisfying conditions in their entrepreneurial profession than in their previous occupations.

Interestingly, satisfying conditions may also be specifically related to commitment to an entrepreneurial project. For example, Bernard and Dubard Barbosa (2016) showed that individuals in a quest for meaning may commit to an emerging start-up project because it is much more aligned with their personal values than the organizations they used to work for.

Because value-based commitment is predominantly affective and emotional, based on an identification process and on an internalization of values (Gabay-Mariani, 2020; Gabay-Mariani & Adam, 2020; Meyer et al., 2006), we hypothesize that satisfying conditions will be positively related to value-based commitment vis-à-vis both the entrepreneurial project and the entrepreneurial profession.

Hypothesis 2: *Satisfying conditions* are positively associated with nascent entrepreneurs' *value-based commitment* to (a) their entrepreneurial *project* and (b) their entrepreneurial *profession*.

Non-work concerns

Non-work concerns are personal considerations that refer to side bets made outside the workplace, linked to an individual's day-to-day life (e.g., roots in a specific community that would be disrupted if the person were to change geographic location), which also weigh in the decision to engage in and continue a consistent line of activity (Becker, 1960; Powell & Meyer,

2004). Such personal considerations concern the connection between aspects of individuals' personal lives and their professional position, which have been shown to increase continuance commitment (Powell & Meyer, 2004).

Interestingly, previous research suggests that committing to entrepreneurship may be due to a desire to better reconcile personal and professional lives (Gomez-Breysse, 2016). This desire may explain why independence appears as a main motive for becoming self-employed (Taylor, 1996) and why entrepreneurs might trade independence for growth (Douglas, 2013). Such non-work concerns reinforce one's value-based commitment to the entrepreneurial profession because of the flexibility it offers compared to regular wage employment.

Moreover, the very adequacy between the individual and the entrepreneurial project is an important aspect of the entrepreneurial process, enabling an alignment among personal values, the individual's personal situation, and work (Bernard & Dubard Barbosa, 2016; Bruyat, 1993; Bruyat & Julien, 2001; Gartner, 1985). Thus, we hypothesize that non-work concerns will be positively associated with higher levels of value-based commitment to the entrepreneurial project as well.

Hypothesis 3: *Non-work concerns* are positively associated with nascent entrepreneurs' *value-based commitment* to (a) their entrepreneurial *project* and (b) their entrepreneurial *profession*.

Side bets associated with exchange-based commitment

Relative to value-based commitment, exchange-based commitment is more instrumental and transactional in nature, reflecting a broad sense of perceived costs associated with the discontinuance of a consistent line of activity (Meyer et al., 2006; Rousseau, 1989, 1990; Rousseau & Parks, 1993). Such perceived costs can be financial, material, social or personal, making exchange-based commitment more clearly related to another set of side bets. We identified three specific side-bet categories that we believe are more likely to relate to exchange-based commitment: others' expectations, impersonal bureaucratic arrangements and perceived lack of alternatives.

Others' expectations

Others' expectations, or *generalized cultural expectations*, refer to expectations of important others (e.g., family, management, co-workers, etc.) about what constitutes appropriate and responsible behavior in a given context. Such expectations constitute a category of side bets to the extent that they constrain an individual's course of action by providing penalties (real or imagined social consequences) for those who violate them, especially when they are perceived to stem from important reference groups (Becker, 1960; Powell & Meyer, 2004). In the

organizational commitment literature, others' expectations were found to positively influence normative commitment (Powell & Meyer, 2004) being associated with exchange-based commitment to the extent that they affect that aspect of normative commitment that reflects an obligation to meet such expectations (Gellatly et al., 2006; Meyer et al., 2006).

In the context of nascent entrepreneurship, where the environment and the construction of collaborations and network ties play a crucial role for organizational emergence (Chay, 1993; Gartner, 1985; Sammut, 2001; Sarasvathy, 2001; Tornikoski & Newbert, 2007), meeting others' expectations could be particularly important. Indeed, generating expectations from stakeholders, including clients, investors, and other actors who could support the project (e.g., incubators, accelerators, members of advisory boards, and mentors), is an important step to get them onboard and even sends a signal of positive feedback or project approval (Sarasvathy, 2001). Nascent entrepreneurs might indeed be constrained in living up to and meeting the expectations of these important groups of reference, because meeting such expectations seems a *sine qua none* condition for gathering the resources needed for project execution and successful business creation. Thus, we hypothesize that such expectations are associated with the individual's exchange-based commitment to the entrepreneurial project.

Moreover, the perceived expectations of important reference groups can reinforce nascent entrepreneurs' belief in their own ability to become an entrepreneur, potentially fueling the belief that the accumulated experience and network built in the entrepreneurial process will be valuable even if the current project fails. Because the ability to raise and meet stakeholders' expectations is a key aspect of the entrepreneurial profession, we hypothesize that others' expectations will weigh on the individual's decision to persist in the entrepreneurial career, increasing the perceived social, financial, and material costs associated with exiting entrepreneurship. Hence, we also hypothesize that such expectations are associated with exchange-based commitment to the entrepreneurial profession.

Hypothesis 4: *Others' expectations* are positively associated with nascent entrepreneurs' *exchange-based commitment* to (a) their entrepreneurial *project* and (b) their entrepreneurial *profession*.

Impersonal bureaucratic arrangements

Impersonal bureaucratic arrangements refer to institutional rules and policies designed to encourage and reward long-term continuance of a consistent line of activity (Becker, 1960). In the organizational commitment literature, typical examples of impersonal bureaucratic arrangements include seniority benefits, retention bonuses, pension rights, or the prospect of moving to a higher-paying position, which are all institutionally designed to encourage employee retention and continuance

commitment to the organization (e.g., Becker, 1960; Powel & Meyer, 2004). Thus, this side-bet category relates to the individual's evaluation of the rewards and gains associated with persistence in a work situation.

Although the typical impersonal bureaucratic arrangements that increase organizational commitment are generally absent in the entrepreneurial context, we may observe an equivalent logic of weighing long-term rewards that would correspond to impersonal arrangements among nascent entrepreneurs. For example, they may pursue entrepreneurship not to miss an opportunity (Dickson & Giglierano, 1986; Fayolle et al., 2008) and because they believe success as an entrepreneur will ensure greater gains than a wage-earning position (Åstebro, 2003; Kolvereid, 1996). The perceived potential of a project to achieve future gains as well as the prestige and financial rewards associated with success in the entrepreneurial profession constitute entrepreneurship-specific impersonal bureaucratic arrangements, which, we hypothesize, are related to exchange-based commitment to both the project and the profession.

Hypothesis 5: *Impersonal bureaucratic arrangements* are positively associated with nascent entrepreneurs' *exchange-based commitment* to (a) their entrepreneurial *project* and (b) their entrepreneurial *profession*.

Perceived lack of alternatives

Perceived lack of alternatives refers to an individual's perception of other available options in the job market (Powell & Meyer, 2004). In the organizational commitment literature, this perception is considered a basis for continuance commitment (Meyer & Allen, 1991; Meyer & Herscovitch, 2001), with empirical studies showing a direct influence of perceived lack of alternatives on this component of commitment (e.g., Powell & Meyer, 2004), which has been shown to be constitutive of exchange-based commitment (Meyer et al., 2006).

In the entrepreneurship literature, the availability of other employment opportunities in the labor market has also been underlined as a key component of the decision to become an entrepreneur (e.g., Shapero, 1982). For example, necessity entrepreneurs are driven by a push motivation and engage in entrepreneurship because they suffer from a lack of employability in the labor market (Amit & Muller, 1995; GEM, 2022). Experimental studies have also shown that not having a job decreases the perceived risk associated with engaging in a new venture and increases the likelihood of deciding to start a new business (Dubard Barbosa et al., 2019). Recent research on entrepreneurial commitment also points out that the lack of satisfactory professional alternatives could reinforce continuance commitment in the entrepreneurial process (Adam & Gabay-Mariani, 2021). Consistent with this previous research, we theorize that perceiving a lack of alternatives increases the perceived costs associated with quitting entrepreneurship and

abandoning an entrepreneurial project. Hence, we hypothesize that perceived lack of alternatives is associated with higher levels of exchange-based commitment to both the entrepreneurial project and the entrepreneurial profession.

Hypothesis 6: *Perceived lack of alternatives* is positively associated with nascent entrepreneurs' *exchange-based commitment* to (a) their entrepreneurial *project* and (b) their entrepreneurial *profession*.

Side bets associated with both value-based and exchange-based commitment

Thus far, we have theorized on five side-bet categories that are more clearly associated with either value-based or exchange-based commitment to both the entrepreneurial project and profession. We now turn to two remaining side-bet categories from Becker's (1960) original work that, as we argue below, should in theory be associated with both types of commitment. As shown by Powell and Meyer (2004), some categories of side bets can relate simultaneously to both cost-based and affective-based forms of commitment.

Individual adjustments to social positions

The first side-bet category that we believe relates to both value-based and exchange-based commitment is *individual adjustments to social positions*, which refers to the efforts an individual makes to adapt to a situation and conform to the requirements of a social position, but that make the same individual less fit for other situations and social positions (Becker, 1960; Powel & Meyer, 2004). A typical example in the organizational commitment literature is the investment of effort and time to acquire and develop organization-specific skills, which make an employee more fit to that organization and less fit to others, increasing the cost of leaving the organization (Powell & Meyer, 2004). The same reasoning applies at the occupational level, with occupation-specific skills explaining the dynamics of inter-occupational mobility and job choice in the labor economics literature (e.g., Antonovics & Golan, 2012; Gathmann & Schönberg, 2010).

Interestingly, specificity of skills and human capital has also been shown to influence both entry and persistence in entrepreneurship (e.g., Dunn & Holtz-Eakin, 2000; Gimeno et al., 1997; Lazear, 2004; McCann & Folta, 2010). Building upon this literature, we theorize that individual adjustments to entrepreneurship corresponding to the acquisition of entrepreneurship-specific skills will be positively related to exchange-based commitment to the entrepreneurial profession, because the costs associated with moving to another occupation increase if entrepreneurship-specific skills are not transferable to the new occupation. The same reasoning can be applied at the level of the entrepreneurial project:

exchange-based commitment to the entrepreneurial project will positively relate to individual adjustments corresponding to the acquisition and development of project-specific skills and knowledge, because transferring such skills and knowledge to other projects might not be straightforward. Thus, individual adjustments are positively associated with exchange-based commitment to both the entrepreneurial project and the entrepreneurial profession, to the extent that they are likely to increase the perceived costs associated with discontinuing both the project and an entrepreneurial career. Disengaging from this line of activity becomes more costly for the individual who will have spent time and effort in building specific human capital that is not easily transferrable or applicable to other types of activities.

Entrepreneurship is thus intrinsically linked to a process of transformation of the individual conducting the project (Bruyat, 1993; Bruyat & Julien, 2001). Although individual adjustments related to entrepreneurship- and project-specific skills are essentially instrumental in nature, some individual adjustments also have an affective, value-based dimension. For example, adjusting to the autonomy and independence that characterize entrepreneurial activity (Kolvereid, 1996) may reinforce one's value-based commitment to the entrepreneurial profession because one values autonomy at work, flexibility, and independence *per se*. Moreover, being an entrepreneur is a social position valued by many in society (Anderson & Jack, 2000), because the ideological dimension of "entrepreneurialism" has significantly shaped what individuals believe is "appropriate work" (Eberhart et al., 2022). Thus, individual adjustments to the very characteristics of the entrepreneurial profession may reinforce work values and feelings that one is doing what is right in the right way, therefore being associated with value-based commitment.

Individual adjustments may also mean that the individual is becoming more able to do what he or she likes both in terms of profession and project. The fact that nascent entrepreneurs often choose and shape the entrepreneurial project they create makes plenty of room for aligning personal values in an entrepreneurial project that, somehow, reflects their quest for meaning (e.g., Bernard & Dubard Barbosa, 2016). Therefore, there is often an affective relationship that emerges between the individual and the project³ (e.g., Cardon et al., 2005, 2009). Adjusting to the idiosyncrasies of the entrepreneurial project may strengthen this affective relationship and the emotional attachment to the project, hence being positively related to value-based commitment to the entrepreneurial project.

We therefore hypothesize the following.

Hypothesis 7: *Individual adjustments to social positions* are positively associated with nascent entrepreneurs' *exchange-based*

commitment to (a) their entrepreneurial *project* and (b) their entrepreneurial *profession*, as well as with nascent entrepreneurs' *value-based commitment* to (c) their entrepreneurial *project* and (d) their entrepreneurial *profession*.

Self-presentation concerns

Self-presentation concerns are a side-bet category that refers to the need to present and maintain a consistent public image, which requires behaving in a particular way (Becker, 1960; Powell & Meyer, 2004). Becker (1960) associated this side-bet category with Goffman's (1955) analysis of *face-to-face interaction*, in which individuals present to their contemporaries an image of themselves that ends up constraining their future activity to a line of action congruent with that image.

Because failure to behave in such a consistent way could tarnish the image and carry potential social costs (Powell & Meyer, 2004), self-presentation concerns are clearly related to exchange-based commitment. Inconsistent behavior may indeed penalize entrepreneurs, who must gain the trust of key stakeholders to succeed. For example, investors tend to value consistency in business plans (MacMillan & Narasimha, 1987) and frequently condition new rounds of funding on the achievement of milestones, which requires consistent behavior over time. Thus, the potential costs associated with not being able to live up to one's self-expressed image are not only social but can also be material and financial.

Importantly, self-presentation concerns are such an omnipresent side-bet category in human interaction that we believe it relates to entrepreneurial commitment both to the profession and to the project. For once entrepreneurs present an image of themselves, they are expected to continue a line of activity congruent with that image. This is positively associated with exchange-based commitment to the entrepreneurial profession because quitting entrepreneurship for a wage-earning position could severely tarnish one's image as an entrepreneur and generate potential social, financial, material, and personal costs. Self-presentation concerns are also positively associated with exchange-based commitment to the entrepreneurial project because, although pivoting is culturally acceptable, too much of it may impinge on organizational identity and contribute to failure (Snihur & Clarysse, 2022). And, project failure is generally penalized unless it is counterbalanced by a credible signal of skill that preserves the entrepreneur's personal image (Zunino et al., 2022).

Moreover, self-presentation concerns may be associated with value-based commitment as well, because the need to "save face" and behave in a way that is consistent with one's words has an emotional and affective dimension, at the same time that such consistency may be seen as an ethical value *per se* ("walk the talk"). Self-presentation concerns relate to

³ The fact that many entrepreneurs refer to their project as "my baby" illustrates such an affective relationship.

the fundamental question of “who I am” as an entrepreneur; that is, how nascent entrepreneurs define and present their entrepreneurial identity. Constructing and enacting an entrepreneurial identity implies a high level of emotion and consistency in entrepreneurial behavior; affecting not only the choice to become and continue to be an entrepreneur but also the type of entrepreneur one is and continues to be (e.g., Cardon et al., 2009; Fauchart & Gruber, 2011; Radu-Lefebvre et al., 2021).

In this process of identity construction and maintenance, building a personal image of an autonomous, free, and independent entrepreneur is likely to reinforce value-based commitment to the entrepreneurial profession because pursuing this line of activity appears as essential to achieving the valued goals of autonomy, freedom, and independence. One may thus become attached to the entrepreneurial profession because it becomes part of who she is, that is, her personal identity. This process of identification may also contribute to value-based commitment to the entrepreneurial project because one might assume a parental role-identity relative to the entrepreneurial project (Cardon et al., 2005) and/or because the project reflects the entrepreneur’s social identity (Fauchart & Gruber, 2011). Thus, we hypothesize the following:

Hypothesis 8: *Self-presentation concerns* are positively associated with nascent entrepreneurs’ *exchange-based commitment* to (a) their entrepreneurial *project* and (b) their entrepreneurial *profession*, as well as with nascent entrepreneurs’ *value-based commitment* to (c) their entrepreneurial *project* and (d) their entrepreneurial *profession*.

Methods

Participants

To test our hypotheses with a relevant sample of nascent entrepreneurs, we collected data from individuals granted with the French national student-entrepreneur status (NSES) during the 2018–2019 academic year. NSES is an official status granted to every student conducting an entrepreneurial project within higher education in France, giving them course-credit equivalencies and access to public incubators after assessment by a jury. Because the status is granted only upon objective proof that the student is involved in an entrepreneurial project, it constitutes a relevant filter to target student entrepreneurs that truly qualify as nascent entrepreneurs. Previous research has shown that student entrepreneurship is a relevant phenomenon worldwide (Sieger et al., 2021), given the enormous expansion of entrepreneurship curricula and programs all over the world (Fayolle, 2013; Kuratko, 2005), and the significant efforts of higher education institutions to create the right “climate” for encouraging and supporting students to become entrepreneurs (Bergmann et al., 2016, 2018). Previous

research also suggests that startups created by recent university graduates are more frequent than spin-offs by their faculty and of comparable quality (Åstebro et al., 2012). All these factors, plus the external and objective assessment required to obtain the NSES, make it an ideal setting to study the complex mechanisms leading individuals to commit (or not) to an entrepreneurial career and an entrepreneurial project.

Our questionnaire was distributed through Pépité France, the national initiative dedicated to the implementation of the NSES in French universities and business schools. A total of 313 participants replied to our questionnaire. To ensure we were targeting nascent entrepreneurs, we retained in our analysis only individuals who had initiated at least one gestation activity of the 12 listed in the questionnaire (see below, measurement of “gestation activities”). This reduced the sample to 302 individuals, of which 60 provided incomplete questionnaires with missing variables for our main analyses. Hence, our final sample consisted of 242 nascent entrepreneurs (with an average age of 24.4 years, 67% male).

To further explore the representativeness of our sample as well as its practical and theoretical relevance, we conducted several sample comparisons (see Table 1). First, we tested whether our sample was representative of the general population of NSES holders in France. Our analysis shows that our sample is not statistically different from the French NSES population regarding gender ($\chi^2(1)=0.815$; $p=0.367$) and age ($t(241)=-0.05$; $p=0.491$).

Second, we compared our sample to well-established panel data samples in entrepreneurship, specifically those of the Global Entrepreneurship Monitor (GEM), Panel Study of Entrepreneurial Dynamics (PSED), and the Global University Entrepreneurial Spirit Students’ Survey (GUESSS). GEM and PSED are well-recognized data sources for studying nascent entrepreneurship; GUESSS is a well-recognized global-scale survey of student entrepreneurship. PSED data are US based; both GEM and GUESSS compile data from a great diversity of countries.

As shown in Table 1, our sample is older than the student sample in GUESSS ($\chi^2(1)=25.57$; $p=0.001$), likely because GUESSS broadly targets higher education students, even if they are not active entrepreneurs. Yet, the average student entrepreneur in our sample is relatively younger than the average nascent entrepreneur in GEM ($t(241)=-43.26$; $p=0.001$) and in the PSED ($t(241)=-50.94$; $p=0.001$). Finally, our sample features relatively fewer women than GEM ($\chi^2(1)=4.66$; $p=0.031$), PSED ($\chi^2(1)=13.60$; $p=0.001$), and GUESSS ($\chi^2(1)=129.13$; $p=0.001$).

Thus, we infer that our sample is representative of the French population of student entrepreneurs (nascent entrepreneurs operating within higher education), being significantly more masculine and more experienced than a more general student sample (e.g., GUESSS), but younger and less experienced than more general samples of nascent entrepreneurs

Table 1. Comparisons of our sample to NSES populations and other relevant samples

	Sample	NSES holders population	GEM	PSED	GUESSS
Variables	(n=242)	(n=4,294) ^a	(n=17,053) ^b	(n=2,902) ^c	(n=267,366) ^d
Gender					
Male	0.67	0.65	60.5	0.56	0.30
Female	0.33	0.35	39.5	0.44	0.60
Age					
Mean/distribution	24.37 (36.8% between ages 18 and 23, 52.2% age 24 and above)	24	37.48	39.81	59.2% between ages 18 and 23

Notes: ^aData on the French national population of student entrepreneurs were provided by Pépite France and the census of student entrepreneurs holding the NSES in March 2019; ^bFigures obtained from GEM 2018 NES Global Individual Data, for individuals characterized as “actively involved in startup efforts”; ^cFigures obtained from PSED’s raw data, for individuals characterized as nascent entrepreneurs (“Wave 1: nascent entre cases suitable for analysis”); ^dfigures extracted from the Global GUESSS Report 2021.

Source: Own elaboration.

NSES, national student-entrepreneur status; GEM, Global Entrepreneurship Monitor; PSED, Panel Study of Entrepreneurial Dynamics; GUESSS, Global University Entrepreneurial Spirit Students’ Survey.

(e.g., GEM and PSED). We have no reason to believe that our theoretical hypotheses should be different for a population of more experienced nascent entrepreneurs.

Measures

Dependent variables

We used the measurement scale validated by Gabay-Mariani (2022) to assess our four dependent variables: value-based commitment to the project, value-based commitment to the profession, exchange-based commitment to the project, and exchange-based commitment to the profession. Respondents indicated to what extent they recognized themselves in each item on a five-point scale (ranging from 1 = “not at all” to 5 = “completely”). Confirmatory factor analysis corroborated that all dependent variables are unidimensional, with factor loadings higher than 0.64. All scales also showed good reliability, with Cronbach alphas above 0.70. We show the full scale with factor loadings and reliability statistics in appendix 1.

Independent variables

Gestation activities

Following Rotefoss and Kolvereid’s (2005) approach, we submitted a list of gestation activities taken from GEM and PSED questionnaires and asked participants if they had (1) planned but not initiated, (2) initiated but not achieved, or (3) achieved them. Participants were asked to what extent they had: (1) prepared a business plan, (2) collected information on the market and competitors, (3) discussed their ideas with potential clients, (4) developed a product or service, (5) bought facilities or equipment, (6) signed a contract or partnership agreement with another

organization, (7) received public funding, (8) received private funding, (9) borrowed money, (10) made advertising investments, (11) applied for a license or patent, and (12) recruited employees. Answers were recoded as dummy variables capturing whether the activities had been initiated or not (0 = not initiated; 1 = initiated). Our final variable was computed as the total sum of all initiated activities by each nascent entrepreneur.

Side bets

To measure side bets in the specific context of nascent entrepreneurship, we started with a modified version of Powell and Meyer’s (2004) scale, which we then further refined through three focus groups. Specifically, we considered Powell and Meyer’s (2004) insight that side bets are formative, rather than reflective, constructs due to their highly idiosyncratic nature. Following Diamantopolous and Winkelhofer’s (2001) recommendations regarding formative measures, we first specified the content of each side-bet category and ensured we integrated all key indicators. Accordingly, we organized three focus groups with 22 NSES nascent entrepreneurs. All had conducted gestation activities by the time of data collection. Focus groups participated in a semi-structured discussion: participants were asked to share the reasons why they were pursuing their project and asked to discuss them collectively. An in-depth content analysis combining tape recording and materials collected during each focus group (Post-its, research assistant’s notes) enabled us to refine Powell and Meyer’s (2004) seven-factor measure, thus incorporating nascent entrepreneurship specificities.

For example, in our measure of *others’ expectations*, we included “my customers/clients’ expectations”, “the trust my mentors and/or program managers placed in me”, and

“Expectations of the people who invested financially in my project”, as these had been mentioned by participants as reference groups relevant to them. We also added “the challenge of this project” and “the learning that this project provides me” in *satisfying conditions*, as these elements emerged as important components of nascent entrepreneurs’ positive experiences at work. As for *self-presentation concerns*, we included participants’ concerns regarding their sense of belonging to a broader community of entrepreneurs, in case they had to quit their project. To complement our measure of *individual adjustments*, we wrote items reflecting the advantages associated with a self-employed status, such as “the freedom my current situation gives me” and “being able to choose my daily work”. We also added items referring to entrepreneurs’ confidence in their project’s long-term outcomes and awareness that they might “miss the boat” if they stop prematurely, such as “the fear of missing a great opportunity” or “conditions currently favorable to the success of this project”. Finally, we added to *personal concerns* items referring to the project’s compliance with entrepreneurs’ personal life, such as “work on an important subject to me” and “reconciling my personal and professional life”.

For each side-bet category, respondents were asked: “To what extent are the following reasons important for you to continue your entrepreneurial project?” Responses were given on a five-point scale ranging from 1 = “not important at all” to 5 = “very important”. Confirmatory factor analysis supported that each side-bet category is unidimensional, with factor loadings higher than 0.57. All scales also showed good reliability, with Cronbach alphas above 0.73. Appendix 2 exhibits the full list of items, with illustrative quotes excerpted from the focus groups for each category of side bets, as well as factor loadings and reliability statistics.

Control variables

In our analyses, we also included several individual-related control variables that have been shown to influence nascent entrepreneurship: gender; age; entrepreneurial experience (“Before this project, have you already created a company?”), parent entrepreneur (“Has one of your parents already created a company?”), and pedagogical status (student or young graduate). We also asked participants whether the project was individual or collective. Finally, we included a control variable to clearly distinguish those respondents who could already be considered business founders. Following Rotefoss and Kolvereid’s (2005) approach, we asked participants if they had performed the following funding activities: (1) already registered a legal entity for their project, (2) invested their own money in this project, and (3) received their first payment. Those who replied “yes” to these three questions were coded “business founders”.

Analyses and findings

We present descriptive statistics and correlations in Table 2. A first overview shows that the *number of gestation activities* was positively associated with the four dimensions of commitment, as expected in our first set of hypotheses. Interestingly, all side-bet categories were positively correlated with *exchange-based commitment* to the entrepreneurial project and profession. Finally, pairwise correlations were also significant between all side-bet categories and *value-based commitment* to the project and to the profession, except for *perceived lack of alternatives*.

To further explore these relationships and conduct a more robust test of our hypotheses, we conducted hierarchical linear regressions for each type and focus of entrepreneurial commitment. Specifically, for each of our four dependent variables, we run hierarchical linear regression models introducing the independent variables step by step as follows: the control variables first, gestation activities second, and the seven side-bet categories last. This approach is intended to capture the effects of side bets above and beyond those of control variables already examined in previous research and entrepreneurial behavior measured by the initiation of different gestation activities. Table 3 shows our main results.

Our first hypothesis intended to disentangle commitment from behavior, in line with Becker’s (1960) “notes on the concept of commitment”. Accordingly, we hypothesized that the number of gestation activities initiated by nascent entrepreneurs would be positively associated with both value-based and exchange-based commitment to both the entrepreneurial project and the entrepreneurial profession (hypotheses 1a, 1b, 1c, and 1d). Models 1, 3, 5, and 7, in Table 3, provide a direct test of these hypotheses and support H1a, H1b, H1c, and H1d, respectively.

Interestingly, the coefficient of the number of gestation activities diminishes with the introduction of side bets in models 2, 4, 6, and 8, remaining statistically significant only at the project level (models 2 and 6). The introduction of side bets also significantly increases the explanatory power of the regression models, as shown by the significant increases in R^2 . Thus, we now turn to the results concerning each specific side-bet category.

Hypothesis 2 predicted that *satisfying conditions* would be positively associated with nascent entrepreneurs’ *value-based commitment* to (a) their entrepreneurial project and (b) the entrepreneurial profession. Models 2 and 4 in Table 3 corroborate this hypothesis, showing that satisfying conditions are indeed associated with higher levels of value-based commitment to the entrepreneurial project ($\beta = 0.48, p < 0.001$) and to the entrepreneurial profession ($\beta = 0.51, p < 0.001$), respectively.

Hypothesis 3 predicted that *non-work concerns* would be positively associated with nascent entrepreneurs’ *value-based commitment* to (a) their entrepreneurial project and (b) the entrepreneurial profession. Model 2 in Table 3 shows that *non-work concerns* are indeed positively related to higher levels of

Table 2. Descriptive statistics and correlations

Variable	M	SD	Coding/value range	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Control</i>																					
1. Gender	0.32	0.47	0 = male; 1 = female																		
2. Age	24.36	4.7	min.= 18; max.= 54	0.19																	
3. Entrepreneurial experience	0.095	0.29	1 = yes; 0 = no	0.07	0.34																
4. Parents entrepreneurs	0.36	0.48	1 = yes; 0 = no	0.02	0.09	0.14															
5. Team project	0.44	0.5	0 = solo; 1 = team	-0.10	-0.10	-0.09	0.04														
6. Pedagogical status	0.71	0.45	1 = still student; 0 = young graduate	-0.11	-0.18	-0.01	-0.06	-0.02													
7. Business founder	0.20	0.4	1 = yes; 0 = no	-0.08	-0.01	0.12	0.07	-0.00	-0.12												
<i>Behavior</i>																					
8. Number of gestation activities	5.6	2.5	min.= 1; max.= 12	-0.09	0.03	0.07	0.11	0.24	-0.2	0.27											
<i>Side bets</i>																					
9. Satisfying conditions	4.56	0.52	min.= 2,4; max.= 5	0.17	0.07	0.04	0.02	-0.03	-0.05	-0.06	0.17										
10. Non-work concerns	4.49	0.57	min.= 2,5; max.= 5	0.14	0.06	0.06	0.04	-0.13	0.04	-0.03	0.13	0.59									
11. Others' expectations	3.5	0.92	min.= 1; max.= 5	0.10	-0.01	0.05	0.07	0.09	0.03	0.09	0.15	0.46	0.30								
12. Impersonal bureaucratic arrangements	4.14	0.71	min.= 1,4; max.= 5	0.01	0.05	-0.09	0.05	0.03	0.02	0.01	-0.12	0.45	0.36	0.51							
13. Perceived lack of alternatives	2.32	1.06	min.= 1; max.= 5	0.06	0.10	0.07	-0.01	-0.08	-0.09	-0.06	-0.09	0.08	0.07	0.09	0.04						
14. Individual adjustments to social positions	4.32	0.91	min.= 1; max.= 5	0.05	0.01	-0.02	-0.01	-0.10	-0.09	0.11	0.19	0.41	0.39	0.22	0.30	0.14					
15. Self-presentation concerns	3.44	1.02	min.= 1; max.= 5	0.08	-0.03	0.04	0.02	-0.06	-0.01	0.02	0.10	0.38	0.30	0.41	0.43	0.15	0.33				
<i>Entrepreneurial commitment</i>																					
16. Value-based commitment to the project	4.6	0.52	min.= 2,2; max.= 5	0.14	0.15	0.11	0.00	-0.09	-0.09	0.02	0.23	0.69	0.53	0.38	0.42	0.1	0.44	0.31			
17. Value-based commitment to the profession	4.37	0.68	min.= 1,5; max.= 5	0.09	0.05	0.14	0.02	-0.07	-0.06	0.05	0.20	0.60	0.42	0.36	0.40	0.04	0.53	0.40	0.57		
18. Exchange-based commitment to the project	2.95	0.99	min.= 1; max.= 5	-0.09	0.11	0.09	-0.04	-0.01	-0.08	0.02	0.21	0.22	0.19	0.29	0.30	0.21	0.18	0.35	0.29	0.28	
19. Exchange-based commitment to the profession	2.72	1.07	min.= 1; max.= 5	-0.14	-0.08	0.16	-0.02	-0.08	-0.07	0.10	0.16	0.25	0.24	0.24	0.33	0.16	0.44	0.37	0.31	0.46	0.56

Notes: N = 242; all correlations in bold are significant at the 5% level. Source: Own elaboration.

Table 3. Hierarchical regression models

Type of entrepreneurial commitment	Dependent variables							
	Value-based commitment				Exchange-based commitment			
	Project		Profession		Project		Profession	
Focus of entrepreneurial commitment	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Independent variables								
<i>Control variables</i>								
Gender	0.15*	0.02	0.17†	0.02	-0.22	-0.32*	-0.24	-0.34**
Age	0.01	0.01	-0.01	-0.004	0.02	0.03†	-0.03*	-0.03*
Entrepreneurial experience	0.13	0.07	0.32*	0.29*	0.14	-0.02	0.67**	0.61**
Parents entrepreneurs	-0.04	-0.04	-0.03	-0.01	-0.15	-0.17	-0.10	-0.10
Team project	-0.13†	-0.06	-0.14	-0.04	-0.12	-0.09	-0.27*	-0.14
Pedagogical status	-0.02	-0.03	-0.03	-0.03	-0.09	-0.08	-0.18	-0.14
Business founder	-0.06	0.02	-0.03	0.01	-0.12	-0.03	0.06	0.06
<i>Behavior</i>								
Number of gestation activities	0.06***	0.02*	0.06***	0.01	0.09***	0.07**	0.07*	0.02
<i>Side bets</i>								
Satisfying conditions		0.48***		0.51***		-0.03		-0.04
Non-work concerns		0.12**		-0.01		0.07		0.06
Others' expectations		0.02		0.02		0.13†		0.04
Impersonal bureaucratic arrangements		0.07†		0.05		0.16		0.20*
Perceived lack of alternatives		0.01		-0.04		0.15**		0.09
Individual adjustments to social positions		0.08*		0.23***		-0.02		0.36***
Self-presentation concerns		-0.02		0.08*		0.22***		0.19**
<i>Model fit</i>								
R ²	0.11	0.55	0.08	0.49	0.08	0.25	0.10	0.35
DR ²		0.44		0.42		0.17		0.25
F	3.7**	18.61***	2.5*	14.9***	2.45*	5.12***	3.24**	7.95***
N	242	242	242	242	242	242	242	242
Highest (mean) VIF	1.237 (1.133)	1.980 (1,349)	1.237 (1.133)	1.980 (1,349)	1.237 (1.133)	1.980 (1,349)	1.237 (1.133)	1.980 (1,349)

Notes: Coefficients are standardized beta weights; † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: Own elaboration.

value-based commitment to the entrepreneurial project ($\beta = 0.12, p < 0.01$), thus supporting H3a. However, model 4 shows a nonsignificant coefficient for *non-work concerns* ($\beta = -0.01, n.s.$), failing to support H3b.

Hypothesis 4 concerned *exchange-based commitment* and predicted that *others' expectations* would be associated with this type of commitment both at the project level (H4a) and at the profession level (H4b). We found that *others' expectations* were associated with exchange-based commitment only at the project level (see model 6 in Table 3) and at a relatively lower level of significance ($\beta = 0.13, p < 0.10$). We therefore consider hypothesis 4a partially supported. Hypothesis 4b, however, is not supported by model 8 ($\beta = 0.04, n.s.$).

Hypothesis 5 also concerned *exchange-based commitment*, predicting that *impersonal bureaucratic arrangements* would

be positively associated with this type of commitment to both the entrepreneurial project (H5a) and profession (H5b). Model 6 in Table 3 shows a nonsignificant coefficient for *impersonal bureaucratic arrangements* ($\beta = 0.16, n.s.$), thus failing to support H5a. However, model 8 shows that impersonal bureaucratic arrangements are indeed positively associated with higher levels of exchange-based commitment to the entrepreneurial profession ($\beta = 0.20, p < 0.05$), thus supporting H5b. Unexpectedly, we also found that impersonal bureaucratic arrangements were slightly associated with higher levels of *value-based commitment to the entrepreneurial project* ($\beta = 0.07, p < 0.10$, see model 2 in Table 3).

Hypothesis 6 predicted that *perceived lack of alternatives* would be positively associated with *exchange-based commitment* to both the entrepreneurial project (H6a) and profession

(H6b). Model 6 in Table 3 supports H6a, showing that perceived lack of alternatives is significantly associated with higher levels of exchange-based commitment to the entrepreneurial project ($\beta = 0.15, p < 0.01$). However, H6b is not supported, as model 8 shows a nonsignificant coefficient ($\beta = 0.09, n.s.$).

Finally, our last two sets of hypotheses concerned side-bet categories that we expected to be related to both value-based and exchange-based commitment at both the project and the profession levels. Specifically, hypotheses 7a, 7b, 7c, and 7d concerned *individual adjustments to social positions*. Our results shown in Table 3 corroborate three of these hypotheses. Model 2 shows a significant positive association between individual adjustments to social positions and value-based commitment to the entrepreneurial project ($\beta = 0.08, p < 0.05$), thus corroborating hypothesis 7c. Model 4 shows a significant positive association with value-based commitment to the entrepreneurial profession ($\beta = 0.23, p < 0.001$), thus corroborating hypothesis 7d. Model 8 shows a significant positive association with exchange-based commitment to the entrepreneurial profession ($\beta = 0.36, p < 0.001$), hence corroborating hypothesis 7b. However, model 6 fails to support hypothesis 7a ($\beta = -0.02, n.s.$).

Hypotheses 8a, 8b, 8c, and 8d referred to *self-presentation concerns*. Results in Table 3 also support three of these

hypotheses. Although model 2 fails to support hypothesis 8c, showing a non-significant association with value-based commitment to the entrepreneurial project ($\beta = -0.02, n.s.$), the other models show a significant association between self-presentation concerns and (1) value-based commitment to the entrepreneurial profession ($\beta = 0.08, p < 0.05$, model 4), (2) exchange-based commitment to the entrepreneurial project ($\beta = 0.22, p < 0.001$, model 6), and (3) exchange-based commitment to the entrepreneurial profession ($\beta = 0.19, p < 0.01$, model 8). Thus, hypotheses 8a, 8b, and 8d are supported.

Table 4 summarizes our main results. We discuss them in greater depth in the next section.

Discussion

Assessing side-bet theory, behavior, and commitment in the context of nascent entrepreneurship

To the best of our knowledge, our study provides the first empirical investigation of side-bet theory in the context of nascent entrepreneurship. Assessing Becker's theory is not an easy task, even in the relatively more established field of

Table 4 Summary of results

Side-bet category	Behavior	Relationship	Type of entrepreneurial commitment	Focus of commitment	Specific hypothesis	Result
Number of gestation activities initiated	is positively related to		value-based commitment	project	H1a	Supported
				profession	H1b	Supported
			exchange-based commitment	project	H1c	Supported
				profession	H1d	Supported
Satisfying conditions	are positively related to		value-based commitment	project	H2a	Supported
				profession	H2b	Supported
Non-work concerns	are positively related to		value-based commitment	project	H3a	Supported
				profession	H3b	Not supported
Others' expectations	are positively related to		exchange-based commitment	project	H4a	Partially supported
				profession	H4b	Not supported
Impersonal bureaucratic arrangements	are positively related to		exchange-based commitment	project	H5a	Not supported
				profession	H5b	Supported
Perceived lack of alternatives	are positively related to		exchange-based commitment	project	H6a	Supported
				profession	H6b	Not supported
			value-based commitment	project	H7a	Not supported
				profession	H7b	Supported
Individual adjustments to social positions	are positively related to		exchange-based commitment	project	H7a	Not supported
				profession	H7b	Supported
			value-based commitment	project	H7c	Supported
				profession	H7d	Supported
Self-presentation concerns	are positively related to		exchange-based commitment	project	H8a	Supported
				profession	H8b	Supported
			value-based commitment	project	H8c	Not supported
				profession	H8d	Supported

Source: own elaboration.

organizational commitment (e.g., Meyer & Allen, 1984; Shore et al., 2000). Therefore, our results must be interpreted in the light of several considerations that include important theoretical and methodological distinctions.

First, we followed Becker's (1960) insight that commitment must be characterized independent of the behavior it serves to explain. Second, we followed Powell and Meyer (2004) – and departed from Shore et al. (2000) – in that side bets are conceived of and better understood as antecedents of commitment and not as a type of commitment or commitment *per se*. These two theoretical insights have important methodological implications for the study of side-bet theory in the entrepreneurial context. In terms of measurement, an important implication is that entrepreneurial commitment, entrepreneurial behavior, and side bets must all be measured separately and independently from each other. In terms of analysis, another implication is that one should examine the effects of side bets above and beyond the relationship between entrepreneurial commitment and behavior.

In our study, we took several steps to reach that end. First, we adopted a multidimensional view of entrepreneurial commitment. We built upon previous research on *organizational* (e.g., Gellatly et al., 2006; Meyer & Allen, 1991; Meyer & Herscovitch, 2001; Meyer et al., 2006; Rousseau, 1989; Rousseau & Parks, 1993) and *entrepreneurial* commitment (e.g., Adam & Fayolle, 2015; Gabay-Mariani, 2022; Gabay-Mariani & Boissin, 2021; Valéau, 2017) to distinguish two types of commitment (value-based and exchange-based) and two foci of commitment (the entrepreneurial project and the entrepreneurial profession) that are relevant to the entrepreneurial process. Therefore, we measured four dimensions of entrepreneurial commitment (as shown in Figure 1) and investigated how each of them was related to both entrepreneurial behavior and different side-bet categories.

Although our data do not allow us to disentangle causality, we hypothesized a recursive relationship between entrepreneurial commitment and entrepreneurial behavior, in which higher levels of commitment are generally associated with continuance in entrepreneurial behavior. In the context of nascent entrepreneurship, such behavior is better captured in terms of gestation activities (Carter et al., 1996; Rotefoss & Kolvereid, 2005). Thus, to better characterize entrepreneurial commitment independent of the behavior it explains and, at the same time, allow for an investigation of side-bet categories net of the effect of behavior, we hypothesized and found a positive relationship between gestation activities and the four dimensions of entrepreneurial commitment (hypothesis 1: a, b, c, and d). This result echoes previous research showing a positive association among the level of commitment, the level of advancement, and investment of personal resources in one's entrepreneurial project (Gabay-Mariani & Boissin, 2021).

We then turned to an examination of how different side-bet categories related to different types of entrepreneurial commitment. We found that each of the four dimensions of entrepreneurial commitment is indeed associated with different categories of side bets. For example, commitment to the entrepreneurial project is associated with different side-bet categories depending on whether it is value based or exchange based. Value-based commitment to the project is positively associated with satisfying conditions, non-work concerns, and individual adjustments to social positions (as hypothesized in H2a, H3a, and H7c) and to a lesser extent with impersonal bureaucratic arrangements (not hypothesized). In contrast, exchange-based commitment to the project is positively associated with perceived lack of alternatives and self-presentation concerns (H6a and H8a, respectively) and to a lesser extent with others' expectations (H4a). This suggests different roots and potentially two distinct commitment paths that future research could further explore.

In our data, commitment to the entrepreneurial profession was less marked by a distinction between side-bet categories. As predicted, individual adjustments to social positions and self-presentation concerns were positively associated with both value-based and exchange-based commitment to the entrepreneurial profession (H7b, H7d, H8b, and H8d). However, value-based commitment to the profession was also positively associated with satisfying conditions (H2b), whereas exchange-based commitment was positively associated with impersonal bureaucratic arrangements (H5b). Interestingly, the inclusion of side bets in our regression models made the coefficient of gestation activities become nonsignificant in explaining commitment to the entrepreneurial profession (models 4 and 8 in Table 3). However, the effect of entrepreneurial experience remained significant.

In line with Powell and Meyer's (2004) findings, our results suggest that side bets do not only relate to cost-based forms of commitment, as has sometimes been implied in the literature (Allen & Meyer, 1990). Our findings indicate that there can be an awareness of the benefits and advantages provided by a given situation, which increases the perceived costs of discontinuity (exchange-based commitment) but also fuels individuals' emotional attachment to a professional situation (value-based commitment). For example, individual adjustments contribute to both exchange-based and value-based forms of commitment to the profession (H7c and H7d). Similarly, impersonal bureaucratic arrangements were associated with both exchanged-based commitment to the profession (H5b) and value-based commitment to the project. This suggests that side bets can have an ambivalent effect, as the awareness of the positive aspects of a given situation is accompanied by the fear of losing them and/or "missing the boat" (Dickson & Giglierano, 1986) in the case of inconsistency.

Taken together, these results suggest that entrepreneurial commitment is indeed multidimensional and may take different paths and patterns depending on its nature (value-based or exchange-based), its focus (the project or the profession), and how individuals weigh different side-bet categories. We thus believe this study opens several avenues for further research.

Limitations and further research

Our study is not without limitations, and some avenues for further research stem from such limitations. First, although our sample is representative of the French population of NSES nascent entrepreneurs, one might question whether our results generalize to a more experienced population of nascent entrepreneurs. Comparison with well-established datasets, such as GEM, PSED, and GUESS, suggests that our sample is more masculine and older than general student samples but is much younger than the broader population of nascent entrepreneurs. We highlight that, technically speaking, the student entrepreneurs in our sample are nascent entrepreneurs because they have initiated at least one gestation activity (Rotefoss & Kolvareid, 2005). We also argue that our theoretical reasoning applies to nascent entrepreneurship, and we have no reason to believe that we should hypothesize different relationships for a population of more experienced nascent entrepreneurs. However, we must acknowledge that only further research can test whether our findings hold for different and broader samples of nascent entrepreneurs. For example, the student entrepreneurs in our sample are at the beginning of their professional lives and can consider their entrepreneurial project a learning experience before applying to traditional positions in the job market (Gabay-Mariani & Boissin, 2019). Further research using longitudinal designs would be better able to seize commitment dynamics over time and explore how entrepreneurial experiences influence student entrepreneurs' careers. Moreover, most of our sample falls into opportunity entrepreneurship, as respondents are involved in higher education programs and have options in the labor market. Necessity entrepreneurs may exhibit different commitment profiles, and further research is needed to unveil those.

Second, future research could further refine measures and assessment of side bets in the entrepreneurial context. To measure side bets in the context of nascent entrepreneurship, we adapted Powell and Meyer's (2004) scale by integrating insights from three focus groups with 22 nascent entrepreneurs, which nearly yielded a new scale (see appendix 2). However, these adaptation efforts might be refined, and our list of side-bet categories may not be exhaustive. We considered side-bet theory as a relevant lens to explain commitment, as it covers a large scope of reasons compelling individuals to

a consistent course of action. But this should not prevent future studies from exploring other factors influencing nascent entrepreneurs' commitment profiles.

Future studies could also focus on one side-bet category and deepen our understanding of the specific mechanisms through which it binds nascent entrepreneurs to their ventures. Indeed, each side-bet category may involve a set of socio-cognitive mechanisms potentially explaining entrepreneurial commitment and action. In motivating our hypotheses, we briefly considered such mechanisms, but an in-depth examination of causal mechanisms is beyond the scope of this paper.

Indeed, we cannot infer causality from our cross-sectional data. Our findings are, therefore, only suggestive of distinct paths of entrepreneurial commitment and side bets. Further research using a longitudinal approach is needed to investigate the roots and development of entrepreneurial commitment over time, to assess the causal mechanisms of side bets as antecedents of entrepreneurial commitment, to further disentangle the recursive relationship between entrepreneurial commitment and behavior, to examine commitment thresholds that might cause irreversibility in the entrepreneurial process (de La Ville, 2001), as well as to investigate the potential dark side of entrepreneurial commitment, which could include psychological traps such as escalation of commitment (Staw, 1981). This line of research could even explore whether different commitment profiles lead to productive, unproductive, or even destructive entrepreneurship (Baumol, 1990).

Theoretical contributions

Our study extends side-bet theory and strengthens research focusing on the volitional phase of the entrepreneurial process. To the best of our knowledge, it is the first study to empirically investigate side-bet theory in the context of nascent entrepreneurship. Thus, it extends research on side-bet theory to a context that is very different from the organizational context usually studied in organizational commitment research. This extension may be useful for testing boundaries of side-bet theory, developing new measures, and even revisiting theoretical constructs. Indeed, accounting for the specificities of entrepreneurial action compared to traditional forms of employment, especially the autonomy and self-expression that new venture creation allows, may generate new meanings for side-bet categories such as generalized cultural expectations (others' expectations) and impersonal bureaucratic arrangements, to mention only two of the most notable side-bet categories that considerably shift meaning when transposed from the organizational to the entrepreneurial setting. We hope future studies will further explore this transposition and continue developing side-bet theory in entrepreneurship.

Our study also contributes to a better understanding of entrepreneurs' commitment during the volitional phase of the entrepreneurial process. By differentiating two bases – value-based and exchange-based – and two foci – project and profession – of commitment, it shows that entrepreneurial commitment is multifaceted and that each of its facets may be associated with a unique combination of side bets. Our findings shed light on the nomological net of entrepreneurial commitment, suggesting that commitment to an entrepreneurial project and commitment to the entrepreneurial profession are associated with distinct side-bet categories, which also relate differently to value-based versus exchange-based commitment.

Specifically, our findings suggest that commitment to entrepreneurship as a profession is reinforced through both value- and exchange-based mechanisms influenced by a need to maintain a consistent image of oneself (self-presentation concerns) and by the specific skills, autonomy, and freedom that entrepreneurship fosters (individual adjustments to social positions). Value-based commitment to the entrepreneurial profession is also associated with good working conditions, whereas exchange-based commitment is associated with the perceived potential return and the fear of missing out on a great opportunity (impersonal bureaucratic arrangements).

In turn, commitment to an entrepreneurial project shows distinct patterns of side bets according to its basis. Value-based commitment is associated with satisfying conditions, concerns about life-work balance, and the autonomy and freedom that the project yields, whereas exchange-based commitment is related to perceived lack of alternatives and the need to maintain a consistent image and attend to the expectations of important others.

Taken together, our results contribute to a better understanding of the nascent entrepreneur's mindset during the volitional phase of the entrepreneurial process, underlining the importance of psychosocial factors in the translation of goals into consistent courses of action. We hope this study will stimulate further research refining side-bet theory in entrepreneurship and deepening our understanding of entrepreneurial commitment.

Managerial implications

Our results may inform professionals involved in entrepreneurship-support ecosystems, especially within academic incubators, about the factors associated with nascent entrepreneurs developing a binding relationship to their project and to the entrepreneurial profession. Considering side bets, mentors and program managers could adapt their training and coaching efforts to foster nascent entrepreneurs' persistence. For example, encouraging nascent entrepreneurs to develop projects fitting their preferences, values, and deep motivations could

foster value-based commitment associated with side bets, such as satisfying conditions and non-work concerns. Emphasizing freedom and autonomy as well as the need to keep one's word and maintain a consistent personal image could, in turn, foster both value-based and exchange-based commitment associated with individual adjustments and self-presentation concerns.

Past research has shown that startups created by recent university graduates are of good quality on average and much more frequent than spin-offs by their faculty (Åstebro et al., 2012). In the face of the significant efforts at national and university levels to create the right "climate" for encouraging and supporting student entrepreneurship (Bergmann et al., 2016, 2018), we hope our study will help educators and policy-makers better understand what makes nascent entrepreneurs in general, and students in particular, persist in the entrepreneurial process, commit themselves to their project and to entrepreneurship as a profession, and fully become entrepreneurs.

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Appendices

Appendix I. Entrepreneurial commitment scales

Construct	Items	Loadings	Cronbach alpha
Value-based commitment (project)	I believe in my project's relevance.	.67	.80
	I recognize myself in my entrepreneurial project.	.77	
	My entrepreneurial project means a great deal to me.	.85	
	I find fulfillment in my entrepreneurial project.	.76	
Value-based commitment (profession)	The entrepreneurial project I work on has a mission that I believe in.	.68	.74
	I am enthusiastic about being an entrepreneur.	.80	
	I recognize myself when seeing other entrepreneurs facing problems.	.80	
	I am proud to be an entrepreneur.	.64	
Exchange-based commitment (project)	My values are largely in line with those of entrepreneurship.	.80	.70
	I have put too much—economically, socially, and emotionally—in this project to stop it now.	.76	
	It would be more costly to stop my project now than to continue it.	.73	
	For me, stopping this project would have more disadvantages than advantages.	.76	
Exchange-based commitment (profession)	I feel a responsibility to continue my entrepreneurial project.	.67	.80
	I don't think another situation will provide me with the same advantages as being an entrepreneur.	.71	
	Too much of my life would be disrupted if I stopped being an entrepreneur now.	.76	
	I would lose a lot by becoming (or going back to being) an employee.	.83	
	I don't know what I would do if I weren't an entrepreneur.	.65	
	I would feel guilty if I were to become (or go back to being) an employee.	.77	

Source: own elaboration

Appendix 2. Side-bet scale development

Dimensions	Illustrative quotes from pilot study	Items	Loadings	Cronbach alpha
Satisfying conditions	"The intellectual stimulation it provides me," "the innovative dimension of my project," "I've learned so much"	My enjoyment of working on my project	.65	.79
		The fulfillment that I get from working for this organization	.81	
		The interest and the meaning that I find while working on this project	.77	
		The learning that this project allows me	.69	
		The challenging aspect of this project	.74	
Non-work concerns	"Reconcile my professional life and my job," "personal development," "these are my ideas, I did not steal them," "it is a vector of self-expression, of one's values," "working on a meaningful topic for me"	Work on an important subject for me	.67	.78
		The possibility of implementing my creativity	.70	
		To be able to express my ideas and my values in a project	.84	
		Reconciling my personal and professional life	.60	
		The satisfaction of carrying out a project from A to Z	.76	
Others' expectations	"The trust of experienced collaborators/peers," "interest and support from sponsors," "mentors who trust me," "the support of my associates," "the stakeholders of the project," "the people involved in my project," "contracts signed with customers, with my employees"	My co-workers on this project	.65	.84
		My customers/clients' expectations	.66	
		People who helped me developed this project	.81	
		The desire to live up to the promises I made through this project	.65	
		Expectations of the people who invested financially in my project	.70	
Impersonal bureaucratic arrangements	"My project has real development potential," "my market is promising," "my project has real value for my target market," "it's possible to do it now, I don't have a family, a lot of mobility," "this is the moment because I've never had a real commitment in my life"	Expectations of a community counting on my project	.76	.75
		The trust my mentors and/or program managers placed in me	.77	
		The development potential of my project	.82	
		The opportunity that this project represents	.81	
		The fear of missing a great opportunity	.57	
Perceived lack of alternatives	"Do not live the "metro-work-sleep" rat race," "I've never been happy as a wage earner in a company," "I witness a lot of friends who are not happy as wage earners"	Conditions currently favorable to the success of this project	.78	.73
		The gains associated with the success of this project	.68	
		The lack of comparable jobs in the labor market available to me at this time	.70	
		The likelihood of being unemployed	.89	
		A high rate of unemployment among people in my sector	.85	
Individual adjustments to social positions	"Keeping my freedom and my independence," "I am happy to have chosen entrepreneurship as a way of life," "work where you want, when you want," "the satisfaction of controlling one's own situation," "the freedom to lead my life as I want," "the feeling of mastering one's existence"	The freedom my current situation gives me	.90	.90
		The independence that my current situation gives me	.89	
		Being my own boss	.85	
		Being able to choose my daily work	.87	
Self-presentation concerns	"Working with prestigious clients," "the enthusiasm of my future partners," "being introduced in a community of entrepreneurs," "recognition of the usefulness of my project by actors in the field," "fear of failure," "It would be silly to stop it now," "people I meet are appreciative when I say I'm working on this project"	The respect and prestige I get from working for my project	.82	.87
		The importance of this project for my self-image	.76	
		The legitimacy I have acquired working on this project	.68	
		The status that working for this project provides	.84	
		The opportunity to be part of a community I value	.72	
		The social image associated with working on this project	.86	

Source: own elaboration.