MEASURING THE SOCIAL IDENTITY OF ENTREPRENEURS:

SCALE DEVELOPMENT AND INTERNATIONAL VALIDATION

ABSTRACT

Social identity theory offers an important lens to improve understanding of founders as enterprising individuals, the venture creation process, and its outcomes. Yet, further advances are hindered by the lack of valid scales to measure founders' social identities. Drawing on social identity theory and a systematic classification of founders' social identities (Darwinians, Communitarians, and Missionaries), we develop and test a corresponding 15-item scale in the Alpine region and validate it in 13 additional countries and regions. The scale allows identifying founders' social identities and relating them to processes and outcomes in entrepreneurship. The scale is available online in 15 languages.

EXECUTIVE SUMMARY

Firm founders have the freedom to pursue the types of opportunities that match their own preferences, choose the way in which they want to exploit their opportunities, and pursue the goals they have set for themselves. In other words, given that founders can put a lot of "themselves" into their enterprising activities, new firms become important reflections of the meanings that founders associate with entrepreneurship. Although an increasing number of scholars have turned to the identity concept and investigate how it can inform our understanding of founders as enterprising individuals, of firm creation processes, and of outcomes in entrepreneurship, further progress in this promising research area is severely hindered because we lack validated scales that could capture the social identities of founders. Given that the social identity concept is multidimensional, we require comprehensive and precise measurement instruments in order to obtain valid insights on founders' social identities and how they relate to organizational phenomena.

Hence, to help advance theoretical understanding and empirical research on founders' social identities, the present study develops and validates a scale for measuring founder social identities. In particular, our scale development benefitted from the availability of a rigorous qualitative study that has drawn on social identity theory to systematically assess, investigate

and describe the salient social identities of founders (Fauchart & Gruber, 2011). This prior work not only provides a compelling typology of founders' social identities (labelled *Darwinian*, *Communitarian,* and *Missionary* identities), but also offers detailed insights into the different dimensions and the specific content of these social identities. It thus gave us solid guidance for the development of a scale that can capture these social identities – and of social identities that contain different elements of Darwinian, Communitarian and Missionary identities (the "hybrid" types).

We test and demonstrate the validity of our founder social identity scale through a series of analyses following established scale development procedures (Hinkin, 1995, 2005, 1998; Edwards, 2001). Specifically, we first use a sample of founders from the Western European Alpine region (where the original research on founders' social identities was conducted, cf. Fauchart & Gruber, 2011) to test and validate the scale. We then corroborate the stability of this scale with an unusually comprehensive validation effort that comprised data collection in 12 countries representing major parts of the world (Brazil, Estonia, Germany, Hungary, Italy, Malaysia, Mexico, the Netherlands, Poland, Russia, Singapore, Spain) and from the Anglo-American region (Australian, Canada, UK, and the US). In total, our data comprises 9'431 individuals engaged in new firm creation activities.

By offering a valid scale, our study allows scholars to obtain reliable results in their survey research on social identities of founders and to advance theory development in entrepreneurship and related domains with their empirical insights. In other words, with this methodological advance, we thus reach an important milestone in the quest for an improved understanding not just of the role of founders' social identity in new firm creation, but also of entrepreneurship as an important societal phenomenon. For instance, scholars can use the scale to identify founders' social identities and relate these identities to firm-level processes and outcomes. Scholars may also link the identified social identities to other levels of analysis such as industries (e.g., industry evolution) or whole economies (e.g., economic growth).

The 15 items of our final scale are available online (stable URL: *to be added*) in the following languages: Danish, Dutch, English, Estonian, French, German, Hebrew, Hungarian, Italian, Japanese, Polish, Portuguese, Romanian, Russian, Slovenian, and Spanish. Additional translations can be sent to the corresponding author in order to be added to this list.

1. INTRODUCTION

Entrepreneurship is one of the most intriguing phenomena in our societies, in no small part because it offers individuals the freedom of personal expression – firm founders have the freedom to pursue those types of opportunities that match their own preferences, choose the way in which they want to exploit their opportunities, and pursue the goals that they have set for themselves. In other words, given that founders can put a lot of "themselves" into their enterprising activities, entrepreneurship can be regarded as an important manifestation of the human self and new firms become important reflections of the meanings that founders associate with entrepreneurship (Fauchart & Gruber, 2011).

In order to shed light on the self-concepts of entrepreneurs, and to understand how they shape firm creation processes and outcomes, a quickly growing number of studies have turned to identity theory (e.g., Cardon, Wincent, Singh, & Drnovsek, 2009; Conger, York, & Wry, 2012; Fauchart & Gruber, 2011; Murnieks & Mosakowski, 2007; Farmer, Yao, & Kung-Mcintyre, 2011; Hoang & Gimeno, 2010; Navis & Glynn, 2011; Shepherd & Haynie, 2009). Whereas almost all of the work to date adopts a role identity perspective to inform its theorizing, studies employing social identity theory are just beginning to emerge (Fauchart & Gruber, 2011; Powell & Baker, 2014). As Fauchart and Gruber (2011, p. 935) point out, the "social aspects of a founder's self-concept are likely to be of importance in entrepreneurship because firm creation is an inherently social activity, and organizations are themselves social constructions (Whetten & Mackey, 2002)."

Yet, although an increasing number of scholars have turned to the identity concept and investigate how it can inform our understanding of founders as enterprising individuals, of firm creation processes, and of outcomes in entrepreneurship, further progress in this promising research area is severely hindered because scholars lack validated scales that could capture the social identities of founders. Given that the social identity concept is multidimensional, we require comprehensive and precise measurement instruments in order to obtain valid insights on founders' social identities and how they relate to organizational phenomena. Absent valid measurement instruments, scholars run the risk of developing an incorrect understanding of social identities and of publishing results that would later on be questioned due to measurement problems (Hinkin, 2005). As Korman (1974, p. 194) put it: "The point is not that adequate measurement is 'nice'. It is necessary, crucial, etc. Without it we have nothing."

Hence, to advance research on founders' social identities, the present study develops and validates a scale for measuring the social identities of founders. In particular, our scale development benefitted from the availability of a rigorous qualitative study that has drawn on social identity theory to systematically assess, investigate and describe the salient social identities of founders (Fauchart & Gruber, 2011). This prior work not only provides a compelling typology of founders' social identities (labelled *Darwinian*, *Communitarian*, and *Missionary* identities), but also offers detailed insights into the different dimensions and the specific content of these social identities. It thus gave us solid guidance for the development of a scale that can capture these social identities – and of social identities that contain different elements of Darwinian, Communitarian and Missionary identities (the "hybrid" types). These hybrid types are of research interest in their own right, as they may contain, for instance, elements that create important tensions within an individual (e.g., "how much should I emphasize the profit motive vs. helping the world to become a better place?") and that will affect the firm creation activity (e.g., "should I pick the low-cost producer as my supplier or the environmentally-friendly, higher-cost producer?"). For instance, an investigation of the hybrid social identities of founders

could help us in developing an improved understanding of hybrid organizations, including hybrid social ventures (Miller, Grimes, McMullen, & Vogus, 2012; Battilana & Lee, 2014).

We test and demonstrate the validity of our founder social identity scale through a series of analyses following established scale development procedures (Hinkin, 1995, 2005, 1998; Edwards, 2001). Specifically, we first use a sample of founders from the Western European Alpine region (where the original research on founders' social identities was conducted, cf. Fauchart & Gruber, 2011) to test and validate the scale. We then corroborate the stability of this scale with an unusually comprehensive validation effort that comprised data collection in 12 countries representing major parts of the world (Brazil, Estonia, Germany, Hungary, Italy, Malaysia, Mexico, the Netherlands, Poland, Russia, Singapore, Spain) and from the Anglo-American region (Australian, Canada, UK, and the US). In total, we were able to draw on data from 9'431 individuals engaged in new firm creation activities.

By offering a valid scale, our study allows scholars to obtain reliable results in their survey research on social identities of founders and to advance theory development in entrepreneurship and related domains with their empirical insights. In other words, with this methodological advance, we thus reach an important milestone in the quest for an improved understanding not just of the role of founders' social identity in new firm creation, but also of entrepreneurship as an important societal phenomenon. For instance, scholars can use the scale to identify founders' social identities and relate these identities to firm-level processes and outcomes. Scholars may also link the identified social identities to other levels of analysis such as industries (e.g., industry evolution) or whole economies (e.g., economic growth).

Next, we will provide a brief overview of social identity theory as well as of prior research in entrepreneurship examining the social identities of firm founders and their impact on firm creation processes. We then proceed with a detailed description of the development and validation process of the survey instrument.

2. THEORETICAL BACKGROUND

2.1 Social identity

Social identity theory forms part of the literature on social cognition (Stets & Burke, 2000; Tajfel, 1972; Tajfel & Turner, 1979). In this regard, a review by Hodgkinson and Healey (2008) indicates that five complementary theoretical perspectives drawn from cognitive experimental psychology and social cognition appear in studies that investigate cognition in organizations: a) schema theory, b) behavioral decision theory, c) attribution theory, d) enactment, and e) *social identity theory*. Among these perspectives, behavioral decision theory has received the greatest attention in entrepreneurship research (e.g., Forbes, 2005; Simon, Houghton, & Aquino, 2000). Because social identity theory may be unfamiliar to some entrepreneurship scholars, we briefly review its main theoretical pillars.

The social identity concept was introduced by Tajfel (1972) who sought to understand how the self is conceptualized in social contexts and argued that a person's social identity is "the individual's knowledge that he belongs to certain social groups together with some emotional and value significance to him of this group membership" (p. 292). In social identity theory the individual's self-conception is reflexive in that it can categorize and classify itself in relation to other social categories (Stets & Burke, 2000). Hence, the symbolic or personal interaction with social others plays a key role for the development of an individual's sense of self as these social interactions allow him or her to perform social categorizations and to learn with which social groups or categories he or she wants to be associated with (the "in-group"). Social identification with a particular group provides individuals with social orientation, a feeling of psychological connectedness to the fate of the group, and a frame of reference for establishing self-worth (Hogg & Terry, 2000; Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). An individual's social identification is thus able to provide a partial answer to the fundamental human question "Who am I, what is my place in society?" (Tajfel, 1972; Stryker & Serpe, 1982).

It is also key to recognize that individuals strive to behave and act in ways that are consistent with their social identity. This is because an individual's social identity not only defines the (social) motivations that are most important to that individual, but also serves as a frame for interpreting information and, ultimately, serves as an important source of self-worth to the individual if congruence between the identity and the pursued behaviors and actions is achieved (Stets & Burke, 2000; Tajfel & Turner, 1979). Hence, by examining an individual's social identity, scholars are able to understand and predict behavioral choices and actions.

2.2 Social identity & entrepreneurship

Although social identity theory has become a major theoretical lens in the identity literature (Stets & Burke, 2000), its application to entrepreneurship research is relatively recent (Fauchart & Gruber, 2011; Franke, Gruber, Harhoff, & Henkel, 2006; Powell & Baker, 2014). Indeed, while there are a number of studies emphasizing that identity is a potentially powerful predictor of entrepreneurs' decisions and actions (e.g., Cardon et al., 2009; Conger et al., 2012; Hoang & Gimeno, 2010; Murnieks & Mosakowski, 2007; Navis & Glynn, 2011; Shepherd & Haynie, 2009), only few research studies have addressed social identity in the entrepreneurship context.

In the earliest research contribution that we were able to identify, Franke, Gruber, Harhoff and Henkel (2006) draw on social identity theory to improve understanding of venture capital (VC) decision making. In particular, they employ this lens as the theoretical anchoring for their "similarity hypothesis" in VC decision making, that is, they argue and find support for the notion that VCs will evaluate those venture teams more favorably that have a similar profile as they have.

The study by Fauchart and Gruber (2011) takes on a different angle, one that is explicitly focused on the social identities of entrepreneurs and how these identities affect new firm creation in distinct ways. Building on the observation that social identity theory enables a particularly rich assessment of an individual's sense of self, since social identity is important to a person's feelings, values, beliefs and actions (Hogg & Terry, 2000), they employ social identity theory to

examine founders' social identities, and how they affect their firm-related behaviors and actions. Using a systematic assessment approach for social identities drawn from social identity theory (Brewer & Gardner, 1996), their study identifies three pure types of founder social identities – labelled the "Darwinian", the "Communitarian", and the "Missionary" social identities – as well as hybrid forms that entail features of these primary types. Specifically, they identify heterogeneity in founders' social identities by examining variation (1) in their social motivation for starting a venture, (2) in how they evaluate themselves as founders, and (3) in their frame of reference (the relevant others) when deciding on their behaviors and actions. Beyond identifying the above-mentioned pure (and hybrid) types of founder social identities, their paper also shows that founders with different social identities create their new firms in ways that are congruent with their distinct self-conceptions. In other words, founders with different social identities not only possess systematically different conceptions of what it means to be an entrepreneur, but these self-conceptions strongly influence how they act and behave when setting up their firms (Fauchart & Gruber, 2011).

In a more recent study, Powell and Baker (2014) take on a perspective that is complementary to Fauchart and Gruber (2011) as they investigate how and why founder identity may affect strategic reactions to specific events. In particular, they argue that entrepreneurs' behaviors and actions will be affected by their social identity and by their role-related views of the self (their role identities), and suggest that founders' role identities are a complement and expression of their social identities. In particular, Powell and Baker are interested in understanding how multiple identities may have contradictory implications for how the founder should run their business. Based on the self-descriptions that Powell and Baker obtained from entrepreneurs (e.g., "domestic manufacturer" or "environmentalist", cf. p. 1411) and that they use to identify entrepreneurs' identities, they show, for instance, that a particular role identity may constrain behaviors and actions that would be prescribed to an individual by his or her social identity.

When combined, this emerging body of work indicates that a social identity lens can be fruitful in helping us improve understanding of founders, and their behaviors and actions in new firm creation and development. Yet, whereas interest in social identity is emerging in the entrepreneurship field, systematic efforts to measure the social identities of founders via scales that could be deployed in quantitative research projects are still lacking.

2.3 Developing a founder social identity scale: Observations & preliminary conclusions

In an effort to develop a founder social identity scale, one may turn to the existing psychology and socio-psychology literature on social identity in order to see whether existing scales could be used for this purpose. Specifically, the existing literature employs two main approaches to measure social identities.

The first approach is based on scales that seek to measure social identification with a particular social group or category by asking whether the respondent identifies (or not) with that group or category. For instance, items used by these scales often are of the type "being a member of [group x] is an important reflection of who I am" (collective self-esteem scale by Luhtanen & Crocker, 1992) or "I have a lot of pride in my ethnic group and its accomplishments" (ethnic identity scale by Phinney, 1990).

The second approach is based on scales that assess social identity by capturing particular meanings that people associate with being a member of a certain social group or category (e.g., Sellers, Smith, Shelton, Rowley, & Chavous, 1998), and/or uses dimensions that are meaningful (only) in a specific social context (e.g., Millward, 1995). For instance, Sellers and colleagues (1998) measure the meanings of being African-American. Their scale is built on the different (political) ideologies that Black people might adhere to and their items are of the type "a thorough knowledge of Black history is very important for Blacks today" or "the same forces which have led to the oppression of Blacks have also led to the oppression of other groups" (p. 39). Millward (1995) measures the variance in nurse social identities in a context where the traditional meanings associated with being a nurse (e.g., caring for patients) were starting to be in

competition with new emerging meanings (e.g., as professionals different from, but as important as, doctors). The meanings she measures are focused on the critical aspects of the competition between the traditional and emergent social representations of nurses as a professional group and, thus, focused on the nature of the relationships of nurses with both patients and other professions.

Thus, while the existing literature provides (established) items to measure "identification" with a specific social group or category, it does not provide items that capture the meanings that individuals may associate with being a firm founder. An obvious reason is that the meanings one associates with a particular social group membership are specific to that context and, thus, cannot be transferred to other settings.

Yet, this prior body of work is nonetheless instructive in that it is able to show how social identities are frequently measured in the pertinent literature. In particular, it indicates that in order to understand heterogeneity among founder social identities, one has to rely on items that capture the concrete meanings that are associated with different social identities (i.e., the second approach). It also tells us that the items have to be sufficiently broad in order to be applicable not only to a specific context within the entrepreneurship domain (e.g., environmental entrepreneurship) but, ideally, across all types of entrepreneurship.

Against the backdrop of these observations and in light of the existing research on founders' social identities, a number of reasons suggest that the work by Fauchart and Gruber (2011) is particularly well-suited to serve as a platform from which to develop a social identity scale for the entrepreneurship field[1]: first, by assessing how individuals score on three main dimensions

[1] In contrast, because the work by Franke et al. (2006) employs the social identity concept only as a theoretical backdrop to explain the main mechanism of social identification, it does not offer insights that could be employed for the purposes of the present research. Likewise, although the work of Powell and Baker (2014) studies the social identities of entrepreneurs, their methodological approach is not helpful for the purposes of our scale building effort either, as it does not entail a fine-grained measurement of different dimensions of social identity (which would provide the substance for a refined scale development effort) and does not consider how salient the different meanings that a founder may hold about entrepreneurship are for him or her (which makes it difficult to capture whether some meanings are more important to the founder than others and, thus, whether a founder possesses a salient social identity).

of meaning (social motivation, basis of self-evaluation, frame of reference; cf. Brewer & Gardner, 1996), they adopt a systematic approach to identify founders' social identities that is solidly anchored in prior social identity research and can provide detailed guidance for scale development as it states *concrete meanings* that founders associate with different social identities (see Table 1). Second, their detailed measurement approach allows researchers to assess the *salience* of meanings that a person may hold and, thus, to engage in a fine-grained measurement effort that also allows identification of "hybrid" types of social identities. Third, their typology is of a *general nature*, that is, it is able to capture fundamental distinctions between the social identities of founders independent of the context (e.g., environmental entrepreneurship) – while still being able to offer key insights on the founder and its firm-related behaviors and actions in that specific context. This is so because the three primary social identity types identified in Fauchart and Gruber's empirical study (2011) vary systematically in the level of social inclusiveness of their self-definitions, that is, the loci of self-definition range from the "I" to the "personal We" to the "impersonal We" and, thus, span the complete range of logical possibilities (see Figure 1). While the "I" focus relates to a concern for the achievement of self-centered goals within a social context, the "personal We" includes the goals of others who are part of a proximal social group. In turn, the "impersonal We" is the most inclusive self-categorization that refers to a concern for goals of society-at-large.[2] In other words, because of this important feature of their typology, and because this distinction has important ramifications for the founder's firm creation behaviors and activities, one can use their typology as a platform from which to develop a general scale for the entrepreneurship domain. It also leaves room for the development of more specific scales capturing social identity in certain, specific contexts (e.g., environmental entrepreneurship), albeit the distinction between levels of social inclusiveness in founders' self-

[2] As Fauchart and Gruber (2011, p. 951) point out, these three levels of social inclusiveness of founders' self-definitions show intriguing parallels to the three fundamental conceptions of human nature often found in the discourse of political philosophy scholars.

definitions will matter in such specific contexts as well. For instance, the social identities of founders pursuing environmental entrepreneurship for a local community and environmental entrepreneurship in a global context will still be distinct, and these founders will have different social motivations, use different measures in self-evaluation, and different frames of reference when engaging in their entrepreneurial activity.

Insert Table 1 and Figure 1 about here

In the following, we explain how the typology and the methodology employed by Fauchart and Gruber (2011) is used for our scale development effort.

3. SCALE DEVELOPMENT

Because the founder's social identity is an attribute that cannot be measured directly as it is latent and psychologically abstract, a scale needs to be constructed (Netemeyer, Bearden, & Sharma, 2003). We followed established procedures to develop such a scale (cf. Hinkin, 1995, 2005, 1998; Netemeyer et al., 2003; Edwards, 2001). The different steps are described in detail below.

3.1 Item generation

3.1.1 Content domain

The generation of items that will form a scale should be driven by the goal to capture the specific content domain of interest, while containing no unrelated or irrelevant content. Thus, scale development begins with the specification of the domain, that is, by defining what the construct is about and what should not be included in the construct, and by proposing a definition of the construct (Netemeyer et al., 2003; Nunnally & Bernstein, 1994; Slavec & Drnovšek, 2012). In other words, the primary concern of the item generation phase is content validity (Hinkin, 1995, 1998).

In a second step, a pool of potential items sampling the domain of the construct is generated. It is from this pool of items that the new scale will be derived. There are two approaches to item

development: (1) The deductive approach, which is used when the phenomenon of interest is well understood and there is a theory for it; the extant literature can be used to develop the theoretical definition of the construct and to derive the items. (2) The inductive approach, which is used when there is little theory for the construct, and researchers will first have to discover what is to be measured by asking a sample of respondents. Our scale development is deductive in nature (Hinkin, 1995; Burisch, 1984) because we build on the conceptually grounded typology, related empirical results, and rich data exposed in Fauchart and Gruber (2011). As discussed, this typology captures the meanings individuals associate with being a firm founder and builds on the three main identity dimensions offered by Brewer and Gardner (1996): (i) the *basic social motivation* for founding the firm, (ii) the founder's *basis for self-evaluation*, and (iii) the founder's *frame of reference* (the relevant others). In general terms, Brewer and Gardner (1996) define the *basic social motivation* as the way the individual views the basic goals of social interaction, the *basis of self-evaluation* as the elements from which self-worth is derived, and the *frame of reference* as the way in which and in relation to whom (relevant others) self-worth is derived. Thus, in the entrepreneurship context, the basic social motivation describes the main reasons why people engage in new firm creation, the basis of self-evaluation describes the elements that the founder uses to judge him/herself upon, or believes others will judge him/her upon, and the frame of reference describes the way in which and in relation to whom the founder derives self-worth. These three dimensions are formative, as they jointly determine a founder's social identity. Removing one dimension would alter the domain of the construct (cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

In order to operationalize the three dimensions of a founder's social identity and to generate relevant items aimed at measuring the three primary founder social identity types uncovered by Fauchart and Gruber (2011), we listed the different meanings that the founders in their sample had given to each of these identity dimensions. We thus defined nine constructs to be measured (three constructs per dimension, one per primary identity type; see Table 2). Specifically, for the

basic social motivation to start a new firm, there were three distinct types of motivations that we needed to capture: (i) personal self-interest (for the Darwinians), (ii) mutual concern for the interests and outcomes of known others (for the Communitarians), and (iii) advancing a cause for unknown others (for the Missionaries). For the *basis for self-evaluation*, there were three distinct bases: (i) being a competent professional (for the Darwinians), (ii) being true to similar others (i.e., other group members) (for the Communitarians), and (iii) contributing to make the world a better place (for the Missionaries). For the *frame of reference*, there were three distinct frames of reference: (i) competitors as the primary frame of reference (for the Darwinians), (ii) a specific group as the primary frame of reference (for the Communitarians), and (iii) society-at-large as the primary frame of reference (for the Missionaries).

3.1.2 Sources of item generation

Once the domain contents have been defined, a battery of items is generated that covers the constructs' domains (Hinkin, 1998; Nunnally & Bernstein, 1994) and that is reflective of the constructs. According to Netemeyer *et al*. (2003), item generation can draw on several sources: (i) existing scales that have operationalized the construct or related constructs; (ii) the population of interest, based on interviews with members of the population concerned by the measure; (iii) experts from the field; (iv) the scale developers themselves.

Given that we could draw on rich primary data from the Fauchart and Gruber (2011) study, we started by compiling an exhaustive list of the quotes associated with each of the nine constructs using the original sample of the study. As an illustration, "personal self-interest" covered different motives – such as "making money", "becoming rich", "advancing my professional career", or "building wealth that my children will inherit" – for which we compiled all the quotes. Then, two of the authors independently started to formulate items that could capture the constructs defining founder's social identity. We relied on the theoretical definitions of the nine constructs we needed to measure, as these definitions helped define the content domain of the constructs (Hinkin, 1995), and on the interview quotes, as they were concrete

expressions of what founders had reported in the earlier study. In addition, we performed a thorough search of the literature for existing scale items that could capture the constructs we sought to measure. For instance, we examined how prior research was measuring social motivations (e.g., Wentzel, 1993, social goal scale), self-construals (e.g., Levine et al., 2003; Singelis, 1994, independent and interdependent self-construal scale), or self-esteem (Luhtanen & Crocker, 1992, collective self-esteem scale) in order to understand whether it could provide relevant items. Note that given the different sources and approaches used to generate the items, some items were rather general expressions of the construct, whereas others were more contextualized and specific expressions. For instance, to capture that a founder is motivated by the pursuit of his or her self-interest when creating a new firm, both items describing the pursuit of one's own interest in general (such as "When I do something, I want to improve my personal situation") and items that are more specific to what we know from the entrepreneurship context (such as "I will create my company to make money") were generated. We constrained ourselves to generate a maximum of 15 items per construct.

3.2 Item selection

Once a large item battery has been developed for each construct that covers its respective content domain, a limited number of items needs to be selected in order to arrive at a tractable scale (cf. Hinkin, 1998; Nunnally & Bernstein, 1994). This selection phase permits the deletion of items that are conceptually inconsistent or redundant. Maloney and colleagues (2011) suggest that researchers can accurately generate items and model how items relate to the constructs they measure when they have a strong knowledge of the underlying concepts and can rely on previous research to identify and select the items that best represent the intended constructs. In particular, this allows researchers to reduce the number of items and to design a short scale, while at the same time minimizing threats to reliability and predictive validity.

Accordingly, we used our knowledge of the founders' social identities identified in the work of Fauchart and Gruber (2011) to arrive at an initial selection of the items that had been identified

in the first phase (see above). Specifically, two authors of the present study each compiled a list of items for each construct. They then examined their lists, discussed all the items, and eliminated items that were either too vague, too broad, or too ambiguous. As a result, they arrived at those items that they agreed were reflecting each construct; those items were merged and a common list was put forth for each of the nine constructs. Each of the lists contained between 8 and 10 items (as some items were similar, we decided to choose one item).

In a next step, we drew on our deep knowledge of the entrepreneurs studied by Fauchart and Gruber (2011) in order to rate the items, starting with those we believed were the most relevant ones for describing each construct. This rating addressed both the quality of the items in describing each construct and the important facets that needed to be covered to ensure representativeness of the items (cf. Netemeyer et al., 2003).

An issue to consider in scale construction is the number of items. We chose to select two items per construct. This choice was guided by the fact that (i) the number of items needed to be limited in order not to exhaust the respondents and affect responses (e.g., Roznowski, 1989) while (ii) addressing enough facets of the construct to make sure respondents assessed their right level of identification with the construct (Nunnally & Bernstein, 1994; Maloney et al., 2011). Based on our in-depth experience with a large sample of entrepreneurs (Fauchart & Gruber, 2011), we concluded that two facets were acceptable for each construct. Thus, we compared our ratings for each construct and, in cases when they were different, we discussed them until agreement was reached on which two items best describe each construct. This elaborate procedure led to a raw 18-item founder social identity scale (i.e., with two items for each social identity dimension for each of the three primary founder social identity types).

3.3 Item list characteristics

In framing the items, we followed common practice in the choice of response formats and wording clarity (e.g., Hinkin, 2005; Netemeyer et al., 2003).

First, we structured the items on the list as declarative statements where respondents expressed the extent to which they agree or disagree with statements meant to characterize them. Second, we chose not to label the items as to suggest centrality or salience of particular meanings over others (with labels such as "my main motivation was..." or "the most important motivation for me was..."). While some founders may identify with or adhere strongly to specific constructs (e.g., be strongly or exclusively motivated by their personal interest), others may put a more balanced weight on the different constructs (e.g., founders with a hybrid rather than a pure social identity). Hence, we opted for wordings that do not emphasize importance, centrality, or salience, such as "I will create my company to make money". We made sure the formulation of the items followed recommended practice – such as being as simple and short as possible, using familiar language, generally addressing only one issue per item (unless emphasizing two aspects was what we wanted), and being able to create variance in responses (Netemeyer et al., 2003; Hinkin, 1998).

Finally, we used a 7-point Likert scale including a neutral mid-point as suggested by the literature (Hinkin, 2005). The use of Likert-type scales is recommended when "asking respondents to indicate their level of agreement with a declarative statement or the degree to which what is expressed in the statement is true of a belief, attitude or characteristic of the respondent" (Netemeyer et al., 2003, p. 100).

3.4 External validation and pilot study

Common practice suggests that the items that have been generated by the researchers should be submitted to experts in order to evaluate their content and face validity (i.e., to test whether the domain has been sampled correctly and whether instructions and formats are appropriate). Typically, these experts are asked to classify randomly ordered items to one of the categories to be measured plus one "other" category (e.g., Hinkin, 2005).

Following this procedure, we contacted two professors from the psychology department of one of the author's university with the aim of double checking the content validity of our scale,

that is, how well the items actually described the constructs that they were supposed to measure. These individuals have published work on identity and scales in psychology. We discussed the list of items (the 18 pre-selected items plus two fallback items per construct) with them and explained the constructs they were supposed to measure (by providing definitions of the constructs). In a first step, we asked them to assign each item to one of the nine constructs (or to a "don't fit" category) in order to check for content validity and possible construct contamination. Then, in a second step, we asked them to rate these items (those they had assigned to each construct) by order of relevance or appropriateness. We compared the items they had given the best rating with our 18-item list and, incorporating this feedback, adapted our original list of 18 items in some minor ways.[3] Note that these experts stated that a number of items were equally good and could not decide on a strict hierarchy in such instances (e.g., they could not decide which kind of personal motivation item was the best).

We then pilot-tested the refined 18-item scale with a set of ten persons who were either entrepreneurs or had been entrepreneurs in the past. Specifically, we tested the face validity of the scale, that is, the extent to which the scale items were understandable for people who are part of the target population (ease of reading, simple formulation, items adequately capturing the intended meaning). The literature suggests that five or more population judges should be used at this stage (Netemeyer et al., 2003). We discussed the scale individually with each of these individuals. After accomplishing this step, we again modified the wording of some of the items to make them as understandable as possible (specifically, five items were partially reworded). The resulting 18-item scale is depicted in Table 2.

Insert Table 2 about here

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[3] Specifically, no contamination was observed (no items were assigned to a concept different from the one we had assigned it to), yet some items were given greater relevance (i.e., two fallback items were ranked high although they had been discarded in our final list, which led us to replace one of our original items with a fallback item). In addition, we adapted the wording of four items.

4. TESTING THE SCALE

In this section, we describe how we tested the proposed scale. In order to obtain an encompassing understanding of the validity of the scale, we not only tested it within one location (as it is done in the majority of scale development papers), but did so in multiple regions and countries across several continents. Beyond developing a scale that is both timely and important for entrepreneurship research, this feature of our scale validation effort is noteworthy in its own right, as we are able to offer a particular robust validation procedure and, as shown below, have the opportunity to advance research on the social identity of founders at the same time.

4.1 Data collection and sample

To test and validate the 18-item scale, we required data from a "clean" sample of firm founders, such as nascent entrepreneurs. We thus decided to include the scale in the survey instrument used by the GUESSS project in 2013/2014.[4] GUESSS (Global University Entrepreneurial Spirit Students' Survey, www.guesssurvey.org) investigates students' entrepreneurial intentions and activities across the globe. Importantly, this data set includes nascent entrepreneurs, meaning students who have already embarked on an entrepreneurial career. Given the attractive features of the data set, GUESSS data from different vintages have been used by several studies (e.g., Zellweger, Sieger, & Halter, 2011; Laspita, Breugst, Heblich, & Patzelt, 2012; Lima, Lopes, Nassif, & Silva, 2015; Sieger & Monsen, 2015; Zellweger, Richards, Sieger, & Patel, 2015).

At GUESSS, a core team of senior faculty members of a major Swiss university developed a survey instrument in English. All researchers were fluent in English and were assisted by a native speaker. Following a strict back-translation procedure, the German and the French versions (with the aid of two bilingual native speakers who were not involved in the original survey development) were prepared, too. No major differences between the back-translated and the

[4] The countries covered in the 2013/2014 edition are: Argentina, Australia, Austria, Belgium, Brazil, Canada, Colombia, Denmark, England, Estonia, Finland, France, Germany, Greece, Hungary, Israel, Italy, Japan, Liechtenstein, Luxembourg, Malaysia, Mexico, Netherlands, Nigeria, Poland, Portugal, Romania, Russia, Scotland, Singapore, Slovenia, Spain, Switzerland, and the US.

original versions were found. Some GUESSS country teams translated the English GUESSS survey into their own preferred language and were requested to apply the same strict back-translation procedure. The translated versions were reviewed by the GUESSS core team and checked for categorical and functional equivalence.

An email invitation to the online survey was distributed to GUESSS teams in 34 countries starting in autumn 2013. The teams forwarded the invitations to students from more than 750 universities. Not all countries and universities started data collection at the same time, however; starting dates were between September 2013 and February 2014, and closing dates were between November 2013 and April 2014. In total, 109'026 responses could be collected.[5]

Because the selected sample should "demonstrate the behaviors or possess the attitudes under examination" (Hinkin, 2005, p. 169) and because the sample should be "representative of the actual population of interest" (Hinkin, 1998, p. 110), we utilize *only* responses from those students who are actively engaged in the process of founding their own business (nascent entrepreneurs, founders) (cf. Aldrich & Martinez, 2001; Davidsson & Honig, 2003; Carter, Garnter, Shaver, & Gatewood, 2003).[6] These founders were identified with the question: "Are you currently trying to start your own business / to become self-employed?" This reduced the sample to 16'429 responses. To ensure that we investigate only nascent entrepreneurs and not serial or portfolio entrepreneurs,[7] we excluded those individuals who indicated they are already

[5] In most countries, students could win iPods, travel vouchers, or other items. For the 2013/2014 edition, GUESSS reports a response rate of 5.5% (Sieger, Fueglistaller, & Zellweger, 2014). This compares favorably to some of the previous GUESSS editions (Fueglistaller, Klandt, Halter, & Mueller, 2009) and to other e-mail student surveys (Porter & Whitcomb, 2003). It is likely to be an underestimation, however, as not all universities necessarily invited all their students. Unfortunately, reliable estimates are not available for all universities.

[6] Although our sample only contains nascent entrepreneurs, we note that this sample is derived from a student sample. Student samples are frequently used both in general entrepreneurship research (cf. Zhao, Hills, & Seibert, 2005; Schlaegel & Koenig, 2014) and in scale development efforts within and beyond the entrepreneurship context. For instance, in entrepreneurship, student samples were employed to develop scales on entrepreneurial intentions (Liñán & Chen, 2009), entrepreneurial self-efficacy (McGee, Peterson, Mueller, & Sequeira, 2009), and sustainability values (Shepherd, Kuskova, & Patzelt, 2009). From a methodological standpoint, student samples are considered as effective (Netemeyer et al., 2003) for research on values, psychological phenomena, and behaviors (Bain, Kashima, & Haslam, 2006; Gneezy, List, & Wu, 2006; Shepherd et al., 2009).

[7] This restriction is motivated on empirical grounds, as we strived to have a clean sample of a specific type of entrepreneurs. As a robustness check, we repeated the preliminary and confirmatory factor analyses of our final

engaged in other entrepreneurial activities by answering the question "Are you already running your own business / are you already self-employed?" with yes. This left us with 12'783 cases.

Furthermore, we checked for obviously unreliable and doubtful answers. The 18 items of the initial scale were presented in three blocks that captured one main social identity dimension each (e.g., block 1 had six items that measured basic social motivation with items A1 and A2 for the Darwinians, A3 and A4 for the Communitarians, and A5 and A6 for the Missionaries, see Table 2). Agreeing with all six statements to the same degree is very unlikely (Fauchart & Gruber, 2011). Rather, such a pattern signals that our items have not been answered with adequate care. Thus, we checked if founders gave the same answer to all six items in one of the three blocks (e.g., by clicking "7" for all six items in block 1). We identified 197 founders with this pattern (1.5% of all respondents). Excluding them reduced the sample size to 12'586.

We then only selected those founders that were located in the Alpine region (i.e., Switzerland, Liechtenstein, and Austria), given that the initial 18-item-scale had been developed based on qualitative findings from this region (Fauchart & Gruber, 2011). This led to 448 remaining founders. To have a homogeneous sample without cross-cultural biases, we excluded individuals whose nationality was not Swiss, Liechtensteinian, or Austrian; this is to prevent the potentially confounding influence of cultural backgrounds. This leaves us with 299 founders. Another 17 individuals had to be excluded due to missing values. The final sample of 282 founders exceeds the requirement of having at least 10 responses per item (Hinkin, 2005). A separate test showed that these 282 founders do not differ significantly from the founders that have been excluded in key demographic variables such as gender or field of study. The main characteristics of the 282 founders from the Alpine region and of their ventures are shown in Table 3. Note that 8 of these

15-item scale in the Alpine region while adding serial and portfolio entrepreneurs to the sample. The results are very similar, with only very minor changes in factor loadings and fit indices. This shows that our findings are robust to including more diverse groups of entrepreneurs – which should not be too surprising, given that the employed typology applies to all types of entrepreneurs.

282 founders were excluded from the regressions assessing the nomological net (see section 4.6) due to missing values for some of the control variables.

Insert Table 3 about here

4.2 Preliminary factor analysis

First, we assessed the factorability of our data. All 18 items correlated with a minimum of 0.42 with at least one other item (one correlation with 0.42, all others >0.53), which suggests good factorability (Kim & Mueller, 1978). Also, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy achieves a value of 0.799 and thus exceeds the lower threshold of 0.5 (Kaiser, 1970). In addition, Bartlett's test of sphericity should be significant (Bartlett, 1950), which is the case (chi-square=2158, df=153, $p<0.001$). The diagonals of the anti-image correlation matrix are all at or above 0.696 – which is above the commonly suggested threshold of 0.5 (Neill, 1994). Finally, the communalities of our 18 items are all at or above 0.508 – which confirms that each item shared some common variance with others. All these analyses indicate strong factorability and suggest including all 18 items in subsequent analyses.[8]

Second, we decided on the extraction and rotation method. While it is debatable which extraction method is best (cf. Mulaik, 1990; Costello & Osborne), the extant literature tends to agree that the results from principal component analysis and from factor analytic techniques, such as principal axis factoring, show little differences, with several scholars arguing that principal component analysis is preferable (e.g., Guadagnoli & Velicer, 1988; Velicer & Jackson,

[8] We are aware that in our 18-item scale, each of the nine constructs is represented by two items only. While this meets the requirement of having at least two paths from or to any latent construct (Bollen & Davis, 2009), we need to justify whether we indeed have a sufficient number of indicators per construct. For two indicators to be sufficient, the errors of the two indicators need to be uncorrelated and both indicators need to correlate with a third indicator of another construct whereby the errors of the two original indicators are uncorrelated with the error term of the third construct (cf. Bollen, 1989; Bollen & Long, 1993; Bollen & Curran, 2006). A careful analysis of our correlation matrix and the CFA output in AMOS (e.g., modification indices) revealed that these conditions are fulfilled for all our indicators. This mitigates the risk of our measurement models of not being identified; in fact, in all subsequent CFA analyses, our measurement models are always identified in AMOS.

1990). We thus chose principal component analysis.[9] Prior work suggests employing orthogonal rotation methods when the factors in the analyses are assumed to be uncorrelated, and oblique rotation methods when they might be correlated (Gorsuch, 1983). In our case, each social identity type consists of three social identity dimensions, each represented by a specific construct (cf. Table 2); in addition, the existence of individuals with hybrid identities (Fauchart & Gruber, 2011) indicates that the three social identity types are correlated. Thus, we followed the procedure outlined in Tabachnik and Fiddell (2007) and specified oblique rotation with nine desired factors. The factor correlation matrix shows that five of the correlations are above the suggested threshold of either 0.32 (Tabachnick & Fidell, 2007) or 0.2 (Ho, 2006) – which supports the use of oblique rotation methods such as direct oblimin rotation (Kim & Mueller, 1978).

Applying these extraction and rotation methods resulted in four components with Eigenvalues of 4.619, 3.329, 2.022, and 1.204. The respective variance explained is 25.66%, 18.49%, 11.23% and 6.69%. The total variance explained is thus 62.07%, which is above the suggested threshold of 60% (Hinkin, 2005). Direct oblimin rotation offers both a pattern matrix and a structure matrix for interpretation. While both are generally helpful, we focus on interpreting the pattern matrix (shown in Table 4), as it is regarded as more insightful and appropriate when oblique rotations are performed (cf. Ho, 2006).

Insert Table 4 about here

Table 4 shows that all items have primary factor loadings of at least 0.4 on at least one component (Hinkin, 1998; Hair, Black, Babin, Anderson, & Tatham, 2006). Focusing on the constructs outlined in Table 2, we see that for seven out of nine constructs, the two respective items clearly load on the same component – with the highest cross-loadings being 0.303 in

[9] As a robustness check, we also employed principal axis factoring and found that the data patterns are identical to those obtained with the principal component analysis (Fabrigar, Wegener, MacCallum, & Strahan, 1999).

magnitude (item A5) (which is below the commonly used threshold of 0.4 (cf. Henson & Roberts, 2006; Hair et al., 2006)). Items A1 and A2 (which represent construct I) load together strongly and primarily on component 4 (with factor loadings of 0.579 and 0.723), while both have considerable cross-loadings on component 2 (0.477 and 0.371). Items B3 and B4 (construct V) do not clearly load on the same component; while B3 clearly loads on component 3 (factor loading -0.772) with cross-loadings below 0.25 in magnitude, B4 most strongly loads on component 2 (with a factor loading of only 0.467) and has considerable cross-loadings on component 3 (-0.347) and 4 (-0.344). Furthermore, we note that the factor analysis did not extract 9 components, as could be guessed from Table 2, but only four. Here, however, it is obvious that the three constructs that each of the main social identity types are built upon seem to collapse into corresponding components quite cleanly. Component 1 clearly represents the "Missionary" identity; component 2, despite some cross-loadings, represents the "Darwinian" identity; and component 3 corresponds to the "Communitarian" identity.

In a next step, we re-assessed face validity and content validity of the critical items (A1, A2, B3, and B4) and decided to re-run the analysis while excluding item A1. This is because compared to item A2, it has a lower primary loading on component 4 and a higher cross-loading on component 2 (>0.4). Deleting both A1 and A2 is not an option because this would imply that one of our nine constructs would not be represented in the scale anymore.

We repeated the analysis with the 17 remaining items. Again, four components were extracted, with all primary factor loadings being larger than 0.4. For the same seven constructs as before, the two corresponding items clearly load on the same component without critical cross-loadings (<0.4). Items B3 and B4 (construct V) do not clearly load on the same component; again, B4 turns out to be the more critical item because compared to item B3, its primary loading on component 3 is lower while its cross-loading on component 4 is higher (>0.4). Put differently, item B3 exhibits a higher primary loading and less critical cross-loadings; thus, we decided to repeat the analysis while excluding item B4.

For this 16-item scale, a three-factor solution was extracted; primary factor loadings were all >0.4; and the items of the seven multi-item constructs only loaded on the same component. No cross-loading was >0.4. However, we chose an even more conservative approach; in fact, a cut-off value of 0.2 for the second highest factor loading (cross-loading) is not uncommon (cf. Henson & Roberts, 2006). Items A5 (-0.241) and B5 (0.232) exceeded this threshold. Item A5 also exhibits the third-largest cross-loading of all items (-0.177) and has shown considerable cross-loadings in the previous analyses of the 18- and 17-item scale as well. Hence, to have a scale as strong as possible, we decided to remove item A5.

For the following analyses of the remaining 15 items, the factorability of the data was strongly confirmed by all criteria applied above. For instance, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970) is 0.776, and Bartlett's test of sphericity is significant (chi-square=1740.310, df=105, $p<0.001$). The exploratory factor analyses extracted three strong components with Eigenvalues of 4.121, 2.82, and 1.986. The respective variances explained are 27.47%, 18.8%, and 13.24%, which adds up to 59.51% and is thus very close to the commonly suggested threshold of 60% (Hinkin, 2005)

As Table 5 shows, all nine constructs are represented by their items as expected (constructs I, V, and VII with one item, all others with two items)[10]. Put differently, all 15 items load primarily on the constructs they are expected to load on, with the lowest primary loading being 0.507, which is well above the 0.4 threshold (Hair et al., 2006). The highest cross-loading is 0.193 for item B5, which is clearly below the threshold of 0.4 and even below the conservative cut-off of 0.2 (Henson & Roberts, 2006). We also note that all items load at least three times as strong on the appropriate construct than on any other construct, which is well above the suggested threshold of twice the loading (Hinkin, 2005). Constructs I, II, and III collapse into component

[10] One-item constructs require particular attention. To ensure that the corresponding measurement model can nevertheless be identified, we fixed those indicators' error variance to zero in all corresponding analyses (cf. Bollen, 1989; Bollen & Long, 1993; Bollen & Curran, 2006).

2 which thus clearly represents the "Darwinian" component; component 3 is the "Communitarian" component with constructs IV, V, and VI collapsing into it; and component 1, finally, comprises construct VII, VIII, and IX and thus constitutes the "Missionary" component. We conclude that this measure is suitable for further analyses.

Insert Table 5 about here

In addition, we performed separate unidimensionality analyses (Gerbing & Anderson, 1988). For the six constructs with two items each, corresponding factor analyses showed that only one component is extracted, with factor loadings of at least 0.787. Thus, items intended to represent a single component in fact load only on that component (Bagozzi, Yi, & Phillips, 1991). As we found the nine constructs to collapse into three main identity types (the Darwinian, Communitarian, and Missionary components), we also performed unidimensionality analyses for these components separately. For each of these components, all corresponding items (5 for the Darwinians, 5 for the Communitarians, and 5 for the Missionaries) loaded on one component only, with factor loadings of at least 0.569 (Darwinians), 0.729 (Communitarians), and 0.734 (Missionaries). Each of the three components accounted for at least 50% of the variance in the respective set of items (54.9%, 59.1%, and 60.9%). We also performed these analyses by using principal axis factoring instead of principal component extraction (with direct oblimin rotation). The factor loading pattern is fully identical. This is in line with the claim that results between those two techniques should only differ very little (Guadagnoli & Velicer, 1988). Table 6 reports means, standard deviations, and Pearson correlations of our 15 single items, the six multi-item constructs, and the three main identity types.

Insert Table 6 about here

4.3 Confirmatory factor analysis

Next, we assessed our 15-item-scale with a confirmatory factor analysis (CFA).[11] CFA helps in determining the factor structure of latent variables also because it allows comparing models with different factor structures (Kline, 1998). We first assessed the absolute fit of the nine-factor structure as defined above; then, we compared its fit to alternative models with the same indicators but different path specifications (Edwards, 2001).

To assess the model fit of our nine-factor structure, we use the normed fit index (NFI), the comparative fit index (CFI), the incremental fit index (IFI), the Tucker-Lewis Index (TLI), the standardized root mean square residual (SRMR), and the root mean square error of approximation (RMSEA) as corresponding indicators (Hu & Bentler, 1999; Byrne, 2001), whereby particularly CFI and IFI are regarded as suitable for smaller samples (Fan, Thompson, & Wang, 1999). The model is significant (chi-square=114.647, degrees of freedom=57, $p<0.001$) and all coefficients were significant ($p<0.05$) as well; NFI is 0.936, CFI is 0.965, IFI is 0.967, TLI is 0.927, SRMR is 0.044, and RMSEA is 0.06. Regarding NFI, CFI, IFI, and TLI, values of 0.9 or higher are regarded as indicators of acceptable model fit; values of 0.95 or higher represent good fit (Hu & Bentler, 1999; Bentler, 1992). For SRMR, a value of less than 0.09 is regarded as acceptable (Hu & Bentler, 1999). For RMSEA, a value below 0.08 can be regarded as reasonable (Byrne, 2001; MacCallum, Browne, & Sugawara, 1996), and a value of less than 0.06 indicates good fit (Browne & Cudeck, 1993). Thus, our structure fits the data quite well, as we exceed the threshold of 0.95 with CFI and IFI, with NFI and TLI being very close to it; our RMSEA is at the 0.06 threshold for good fit. Moreover, the factor loadings of the items that load on our six multi-item constructs range between 0.679 and 0.991 and are thus clearly above the 0.4 threshold (Hinkin, 1998). As an alternative model specification, we defined a factor structure

[11] For the six multi-item constructs in our 15-item scale as outlined above, we examined the modification indices to assess to what extent the items' measurement errors are correlated with the measurement errors of other items of the same construct (cf. Brown, 2006; Jaccard & Wan, 1996). All the modification indices were smaller than 4, which suggests that using all 15 items is justified (cf. Loehlin, 2004). All CFA analyses were done in AMOS 21.

where all 15 items load on one factor only (Jöreskog & Sörbom, 1993). This single common factor model shows a poor fit (chi-square=1113.852, df=90, p<0.001; NFI=0.375; IFI=0.394; CFI=0.384; TLI=0.178; RMSEA=0.201). The difference compared to our nine-factor model is significant (difference in chi-square=999.205, difference in df=33, p<0.001). These results support the distinction between our nine constructs.

In addition, Table 6 reports correlations of >0.5 in magnitude between constructs III and II, VI and IV, and IX and VIII. We thus estimated a factor structure were we collapsed constructs III and II, VI and IV, and IX and VIII into one factor each. This six-factor structure shows a less good fit (chi-square=397.577, df=92, p<0.001; NFI=0.798; IFI=837; CFI=0.834; TLI=0.783; RMSEA=0.109) that is significantly worse than the fit of the nine-factor model (difference in chi-square=282.93, difference in df=35, p<0.001) but significantly better than the fit of the one-factor model (difference in chi-square=716.27, difference in df=2, p<0.001). This further supports the structural validity of our nine-factor model (Edwards, 2001) and indicates discriminant validity of our measures (Lewis, 2003; Eby, Durley, Evans, & Ragins, 2008).[12]

While performing preliminary and confirmatory factor analyses on the same sample does not seem to be uncommon (cf. Cardon, Gregoire, Stevens, & Patel, 2013; Chandler, DeTienne, McKelvie, & Mumford, 2011), performing them on different samples is a superior solution (cf. Hinkin, 1998; Tang, Kacmar, & Busenitz, 2012). If the sample is large enough, a random split may be applied (Hinkin, 1998). With our sample, a random split would lead to two samples with 141 cases each; with our initial 18-item scale we would thus fall below the minimum requirement of ten cases per item (Hinkin, 2005). Thus, we refrained from doing so. As reported below, however, we also tested our 15-item scale in numerous other country samples of the GUESSS

[12] In addition, we ran a two-level model where the 9 factors load on the corresponding three higher-level constructs (i.e., the main identity types, see Table 2). The fit of this two-level model is slightly worse than that of the initial (one-level) 9-factor model (CFI=0.932, RMSEA=0.068; difference in χ^2(df)=85.11(52), p<0.001), but still very acceptable in absolute terms.

data set, whereby we performed confirmatory factor analyses in all of the country- and region-subsamples and obtained very good results.

At this stage, we also tested for the potential presence of common method bias (Podsakoff et al., 2003). As discussed above, none of our exploratory and confirmatory factor analyses have shown a single dominant underlying factor, which provides a first indication that common method bias should not be a serious concern. In addition, we followed Podsakoff et al.'s (2003) suggestions and analyzed our data using the unmeasured latent factor method approach. We thus performed a CFA whereby we allowed all our 15 items to load both on their respective theoretical constructs and on an uncorrelated method factor. Adding this latent factor did not significantly improve model fit ($p>0.05$), which signals that common method bias may not be a major issue. Common method bias is also unlikely because, as illustrated above, the 18 initial items were grouped into three blocks whereby the six items of each identity type were spread across all three blocks (i.e., the Darwinian items were always the first two items in each block, see Table 2). This mixed item sequence reduces the likelihood of common method bias.[13]

4.4 Internal consistency assessment

First, we assessed internal consistency by checking the correlations between items that capture the same construct. As Table 6 shows, all the six relevant correlations are at or above 0.573. Second, given that our nine constructs collapsed into the three main identity types in our preliminary factor analysis, we also examined how reliable the three constructs capture their respective main identity type. The five Darwinian items together (from constructs I, II, and III) exhibit a Cronbach's Alpha of 0.78, which is above the recommended threshold of 0.7 (Nunnally, 1978). The five communitarian items (from constructs IV, V, and VI) lead to a Cronbach's Alpha

[13] Testing for non-response bias in a reliable way was unfortunately not possible. This is because in the GUESSS 2013/14 data collection effort in 34 countries and more than 750 universities, start and end dates of data collection differed considerably between countries and between universities within countries. Start dates were between September 2013 and February 2014, and end dates were between November 2013 and April 2014. Hence, identifying early and late respondents reliably was not possible. This prevented us from comparing data from early and late respondents, which is based on the assumption that late respondents are more similar to non-respondents than are early respondents (Oppenheim, 1966).

of 0.82, and the five Missionary items (from constructs VII, VIII, and IX) have a Cronbach's Alpha of 0.84. All item-total correlations in all three scales were at or larger than 0.5 (Netemeyer et al., 2003), except item A2 (0.4). Still, a value of at least 0.4 can be regarded as acceptable, and an item with exactly this value might not be "worth eliminating" (DeVellis, 2011, p. 111). Keeping item A2 is further advocated due to conceptual reasons (i.e., construct representation) as outlined above. These findings suggest that our items are reliable and form internally consistent subscales. Given the internal consistency and parsimony of our measure, we are convinced that it also exhibits content validity and, thus, actually assesses the domain of interest (Hinkin, 2005).

4.5 Convergent and discriminant validity (construct validity)

We assessed construct validity by examining convergent validity (the extent to which the scale correlates with other measures designed to assess similar constructs) and discriminant validity (the extent to which it does not correlate with dissimilar measures) (Hinkin, 2005, 1995).

Convergent validity. To assess convergent validity of our items, we refer to our CFA analysis (Bagozzi et al., 1991). When items that are theorized to load together on the same factor actually do so, this provides evidence of convergent validity (cf. also Chandler et al., 2011). This is strongly confirmed in our CFA as all corresponding factor loadings are significant at $p<0.05$. In addition, we analyzed the average variance extracted (AVE) of our six multi-item constructs. Based on the squared multiple correlation output in AMOS we calculated the corresponding AVEs and found them to range between 0.57 and 0.73, which is above the suggested threshold of 0.5 (Fornell & Larcker, 1981; Bagozzi et al., 1991).

To assess the convergent validity of our scale as a whole, we decided to situate our analysis on the level of the second-order constructs, that is, the Darwinian, Communitarian, and Missionary social identity types (cf. Table 2). This decision corresponds to our goal to advance entrepreneurship research by developing a scale that is able to measure founder social identities (Darwinian, Communitarian, Missionary), thereby helping to advance empirical research in

entrepreneurship. Recall that this decision is also justified from an empirical perspective, as our nine constructs are found to collapse into three corresponding components in our analysis. Nevertheless, we also report the nine constructs separately in order to give a comprehensive overview of our results.

Hence, we investigated whether our 15-item scale correlates with existing scales that one would expect it to be correlated. To establish convergent validity, the correlations between the assessed constructs should be "significantly different from zero and sufficiently large" (Campbell & Fiske, 1959, p. 82; see also Hinkin, 1998). At the same time, Tang et al. (2012) argue that these correlations should not be too strong as this would indicate construct redundancy.

First, we expect our founder social identity types to be correlated with individuals' career choice motives. This is because career choice motives and founders' social identities both provide information about the underlying motivations of individuals with regard to their (entrepreneurial) career. Thus, we assume that the strength of different types of career choice motives will be reflected in the founder's social identity, and particularly in his or her basic social motivation. In other words, we believe that some career choice motives will be more relevant for certain identity types than others. For instance, motives related to having "power" should be strongly and positively correlated with the strength of the Darwinian social identity (and less strongly with the other two identity types). This is because individuals who possess a Darwinian social identity emphasize that they need to get ahead of the competition, be strong competitors and arrive at a dominating position within their respective industries. In contrast, Communitarians and Missionaries tend to be much less concerned about power, as they want to support the community, or help the world as such to become a better place. Collaboration and the achievement of outcomes that are beneficial to a particular social group (Communitarians) or society-at-large (Missionaries) are key to their self-definition (Fauchart & Gruber, 2011).

In the GUESSS survey, respondents were asked how important different career choice motives are when they have to decide on their future career path (from 1=not important at all to 7=very important). Ten different motives based on relevant works (e.g., Carter et al., 2003; Kolvereid, 1996) were presented (see Table 7). We performed an exploratory factor analysis with the ten motive items, extracting three components representing three main motives: the "power" motive (Eigenvalue=3.955) with the items "freedom" (factor loading=0.66), "independence" (0.746), "be your own boss" (0.749), "have power to make decisions" (0.732), and "have authority" (0.669); the "challenge" motive (Eigenvalue=1.259) with the items "have a challenging job" (factor loading=0.794) and "have an exciting job" (0.829); and the "creativity" motive (Eigenvalue=1.159) with the items "realize your dream" (factor loading=0.585), "create something" (0.853), and "take advantage of your creative needs" (0.844). All cross-loadings are smaller than 0.4 in magnitude. Table 7 shows the correlations of the three identity types, the nine constructs, the three main career choice motives, and the ten single motive items.

Insert Table 7 about here

As expected, the "power" motive is most strongly correlated with the Darwinian identity (coeff=0.208, $p<0.01$). The correlations with the other two identities are significantly smaller at $p<0.05$ (coeff=0.150, $p<0.05$ for the Communitarian identity, coeff=0.151, $p<0.05$ for the Missionary identity). Interestingly, we find that the correlations of the "challenge" motive with all three identity types are not statistically different at $p>0.05$ (0.206 for the Darwinians, 0.170 for the Communitarians, 0.158 for the Missionaries, all $p<0.01$). This means that all three types of founders seek challenges in entrepreneurship, even if the challenges they are facing are of a different nature depending on whether they are Darwinians, Communitarians, or Missionaries. The "creativity" motive is most strongly correlated with the Missionary identity (coeff=0.249, $p<0.01$). Indeed, Missionaries often need to engage in and develop organizational (e.g., new supply chains) or institutional types of innovation and, thus, applying their creativity and

imagination is an essential motivation to engage in entrepreneurship. Communitarians show a positive, although weaker, correlation with creativity than the Missionaries – likely because their motivation is geared towards products or services, and not on establishing a new organization that is in many parts, or in its entirety, a creative endeavor. In turn, Darwinians seem to be less driven by the creativity motive, likely because they are aware that offerings that are too novel may not meet market demand (cf. Fauchart & Gruber, 2011). Clearly, more research is needed to understand this intriguing result.[14]

On the level of our nine constructs we find similar results, which are also largely in line with our theoretical expectations. In particular, we find that the power motive is most strongly correlated with construct I (basic social motivation of Darwinians, coeff=0.268, $p<0.01$) – yet also with construct IV (basic social motivation of Communitarians, coeff=0.198, $p<0.01$). However, Darwinians and Communitarians tend to think differently about power: looking at the items, we note that the power items "to have authority" and "have power to make decisions" are more strongly correlated with construct I than with construct IV while the power items "independence" and "be your own boss" are more strongly correlated with construct IV than with construct I, which indicates interesting differences between Darwinians and Communitarians in the way they feel about power in their respective entrepreneurship context.

The challenge motive's correlations with the different constructs do not differ significantly at $p<0.05$. The creativity motive is most strongly correlated with construct IX (frame of reference of Missionaries, coeff=0.272, $p<0.01$) and construct VII (basic social motivation of Missionaries, coeff=0.262, $p<0.01$). Except for two correlations of the "have authority" item (coeff=0.334 and 0.322, respectively), all correlations are below 0.3 in magnitude. While this may appear rather

[14] This general pattern is also visible in the single items (when we look at correlations greater than 0.2): the item most strongly correlated with the Darwinian identity is a power item, and the items most strongly correlated with the Missionary identity are two creativity items.

small (Shipp, Edwards, & Lambert, 2009), these correlations are nevertheless large enough to indicate convergent validity (cf. Tang et al., 2012; McGee et al., 2009).[15]

We further assessed convergent validity by assessing the correlations of our social identity types and constructs with an established measure of entrepreneurial self-efficacy (based on Chen, Greene, & Crick, 1998; eight items with a Cronbach's Alpha of 0.79). This is because our founder social identity scale includes constructs that assess goals and intended achievements of founders; entrepreneurial self-efficacy, in turn, captures individuals' perceptions of their own entrepreneurial skills and capabilities (cf. McGee et al., 2009; Chen et al., 1998; Zhao et al., 2005). Thus, our founder social identity types (in collapsed form and when assessing the different corresponding constructs) and entrepreneurial self-efficacy are expected to correlate, although variance in the strength of the correlation is likely to exist. In fact, Communitarian founders are more likely than others (at least in the sample of Fauchart & Gruber, 2011) to be pushed into entrepreneurship by other people, more specifically fellow community members. In particular, this is the case when they have developed an innovative product – typically designed for their own needs first – that the community is interested in having, too. Darwinians and Missionaries, in turn, are more often pulled into entrepreneurship by their own drive (even if they may share their enthusiasm with other like-minded people). This pattern is supported by our results as we find entrepreneurial self-efficacy to be significantly related to all three identity types and most (six out of nine) constructs (cf. Table 7); yet, we also find that the strength of the correlation varies across identity types with the Darwinians having the strongest correlation and the Communitarians the weakest one. The magnitudes of the correlations are large enough to further indicate convergent validity of our scale.

[15] While some studies report correlations between roughly 0.4 and 0.6 to indicate convergent validity (e.g., Shepherd et al., 2009; Eby et al., 2008), other studies refer to correlations of a magnitude between 0.2 and 0.3 to indicate convergent validity (Tang et al., 2012; e.g., McGee et al., 2009).

Discriminant validity. To investigate the discriminant validity of our items and the scale as a whole, we followed prior scale building research (e.g., Cardon et al., 2013) and first assessed the correlations between the three identity types. As shown in Table 6, the Darwinian, Communitarian, and Missionary identities exhibit fairly low correlations. The Darwinian identity is not significantly related to the Missionary identity (coeff=0.024) but significantly related to the Communitarian identity (coeff=0.128, $p<0.05$). The correlation between the Communitarian and the Missionary identity is 0.336 ($p<0.01$). This is quite close to the threshold of 0.3 where correlations can still be regarded as small when assessing discriminant validity (Shipp et al., 2009; Cohen, 1992). These results show that the corresponding items only share a fairly low amount of variance – which indicates discriminant validity. Additional insights into discriminant validity can be gained by examining the item-construct correlations, whereby items should correlate more strongly with their "own" construct than with other constructs (Messick, 1988). Table 6 shows that this is fulfilled for all items. Also, we compared the average variance extracted (AVE) of each multi-item construct with the squared correlations between the respective construct and all other constructs. The AVE is always greater, which signals discriminant validity of these scale dimensions (cf. Fornell & Larcker, 1981).

Furthermore, the results from our CFA analyses can be used to assess discriminant validity (Bagozzi et al., 1991; John & Benet-Martinez, 2000). The fact that a nine-factor model's fit is superior to that of a one-factor model lends further support to discriminant validity. In addition, we tested a three-factor structure whereby each factor represents one of the main identity types as defined above, with the five corresponding items (cf. Table 2) loading on it. This factor structure's fit is significantly better ($p<0.001$) than the fit of a two-factor structure where the Communitarian and the Missionary factor are combined. Given these findings, we conclude that a distinction between our nine constructs and also between the primary identity types is strongly supported. The following table gives an overview of the fit indices of all the different factor structures that we have assessed so far. Clearly, the 9-factor structure exhibits the best fit.

Insert Table 8 about here

We further explored discriminant validity by assessing whether our scale is empirically distinct from conceptually related variables (cf. Eby et al., 2008), that is, whether it is distinct from dissimilar measures where one would not expect to find a correlation with the focal measure (Hinkin, 2005). One example is "locus of control" which captures individuals' controllability perceptions, meaning their beliefs to what extent the performance of a behavior is up to themselves and not to others (cf. Levenson, 1973; Rotter, 1966). A person with an internal locus of control believes that he or she has influence over outcomes through ability, effort, or skills, while a person with an external locus of control thinks that uncontrollable outside forces, such as powerful others or chance, determine outcomes (Levenson, 1973). We believe that there is a certain conceptual relatedness with the "basis for self-evaluation" constructs in our scale (II, V, and VIII), as it captures perspectives whose achievement clearly depends on the extent to which individuals actually believe that achieving them is in their own hands. Nevertheless, we believe that our scale is still distinct. Indeed, the correlations of our three-item locus of control measure – based on Levenson (1973), Cronbach's Alpha 0.82 – with the three basis for self-evaluation-constructs (II, V, and VIII) are very small (Cohen, 1988), with only the construct II-correlation being significant (coeff=0.122, $p<0.05$). Locus of control is also not significantly related with the Communitarian or the Missionary identity type; the correlation with the Darwinian identity type is significant ($p<0.01$) but small (coeff=0.199) – a result that is consistent with the Darwinians entering the entrepreneurial career path due to "power" motives (see above). As a whole, the correlations are not large enough to be considered a threat to discriminant validity (Shepherd et al., 2009).[16]

[16] Shepherd et al. (2009) state that magnitudes of correlations in the range from 0.2 to 0.5 might not necessarily be strong enough to be considered a threat to discriminant validity.

In addition, one could expect some conceptual relatedness of our "frame of reference" constructs (III, VI, and IX) with a measure of subjective norms. The frame of reference constructs tap which social reference group(s) founders consider as important; subjective norms, in turn, refer to beliefs about normative expectations of social reference groups such as parents, friends, or fellow students. This results in perceived social pressure to perform, or not, a certain behavior (Ajzen, 1991). In our data, the strongest correlation of our three-item subjective norm measure (based on Linan & Chen 2009, Cronbach's Alpha=0.72) is found with construct III (0.152, $p<0.01$), which is nevertheless small enough to support discriminant validity. Significant correlations with constructs VI and IX cannot be found, with correlation coefficients quite close to zero (0.066 and 0.091). Referring to identity types, subjective norms is significantly correlated only with the Darwinian identity type (0.185, $p<0.01$) – and we believe because the Darwinians have internalized the "standard" meanings of what it means to be the founder of a business (i.e., business person).

Another suitable measure is the extent to which creating an own venture is seen as risky. Risk perceptions and risk propensity have been positively linked to entrepreneurial activities (Zhao et al., 2005). However, while risk considerations are linked to firm creation, prior work on the social identity suggests no link between social identity and risk taking (Hogg, 2001). We explored founders' risk perceptions using a three-item measure (built on previous works by Dohmen et al., 2011; Pennings & Wansink, 2004; Cronbach's Alpha=0.8). Table 9 shows that the correlations between the risk perception measure and the three founder identity types are all insignificant and very small in magnitude (coeff=0.042, 0.046, 0.062); also, no significant correlation with any of the nine constructs can be found, which strongly supports discriminant validity.

Similarly, we expect that the level of uncertainty avoidance in society (House, Hanges, Javidan, Dorfman, & Gupta, 2004; Hofstede, 2001) will be related to entrepreneurial activity, but not to the strength of the different founder social identities. Using three individual-level items

from the GLOBE project (House et al., 2004) we are able to confirm the lack of correlation. The corresponding correlations are all not significant and very small (coeff=0.056, 0.006, 0.009). The same is true when considering the nine constructs, indicating discriminant validity for the uncertainty avoidance variable.

Insert Table 9 about here

Also, we compared different CFA models (Edwards, 2001; Lewis, 2003). For all our additional variables (locus of control, subjective norms, risk perception, and uncertainty avoidance), we compared two types of models: a model where one of the identity type subscales and the additional variable were treated as separate constructs, and a model where the subscale and the additional variable were collapsed into a single latent construct. All corresponding twelve comparisons showed that the two-factor structure fits significantly better than the one-factor structure ($p<0.001$). Following the same procedure, we compared models where our whole 15-item measure and each of the additional variables were either treated separately or were collapsed. Again, the two-factor structure always fitted significantly better than the one-factor structure ($p<0.001$). Taken together, all these tests provide strong support for the discriminant validity of our scale.

4.6 The nomological net

To assess how our scale works within a system of related constructs (i.e., nomological net) (Nunnally & Bernstein, 1994), we examined several potential predictors, correlates, and outcomes of founder social identities.

Based on the very descriptions of the identities and on the type of data we were able to draw upon, at least three antecedents could be examined: (i) the type of education the founder has; (ii) the gender of the founder; and (iii) the age of the founder. To identify predictors and correlates of founder social identity we performed three different binary logistic regressions. In each of those regressions, we used a different dummy variable as dependent variable that indicated

whether the founder possesses either a pure Darwinian, Communitarian, or Missionary identity (coded 1), or not (coded 0)[17] and controlled for a few other factors (study level, entrepreneurship education, student's study performance, and parents' entrepreneurship) in a subsample of founders with no missing values for those control variables (N=274).[18]

First, education can be expected to be an antecedent of founder identity because it shapes how people view themselves and what they consider as legitimate behaviour (DiMaggio & Powell, 1983; Pache & Santos, 2013), and in part education is subject to self-selection by potential students who seek out studies that correspond to their own beliefs about themselves and about others. Our data indicates that being a business student is positively related to having a pure Darwinian identity (coeff=0.67, $p<0.05$). Indeed, this relationship can be explained by the fact that the Darwinian's basis for self-evaluation (being a competent business professional) corresponds to what is taught in business schools; also, the focus on competition as a frame of reference resembles a "business school-like approach" (Gruber, Kim, & Brinckmann, 2015).

Second, gender is likely to be a relevant antecedent of founder identity as females are assumed to have more interdependent self-construals (e.g., Markus & Kitayama, 1991; Cross & Madson, 1997; Bird & Brush, 2002); yet more subtle studies assume a difference between males and females in the relational versus collective aspects of interdependent self-construals (Baumeister & Sommer, 1997; Gabriel & Gardner, 1999), meaning that females with an interdependent self-construal are more likely to have a relational orientation (caring for personal others) while males with an interdependent self-construal are more likely to have a collective orientation (caring for impersonal others). Thus, we expected a relationship between being a female and being a Communitarian and possibly between being a male and being a Missionary (although to a lesser

[17] Respondents were regarded as having a "pure" identity when their agreement to all five items of the three constructs that collapse to one main component/identity type was at 5 or higher (on our 1-7 scale), with no such agreement to other identity types. As an example, a "pure Darwinian" ticked at least "5" for items A2, B1, B2, C1, and C2, but less than "5" for at least one item that belongs to the Communitarian identity and for at least one "Missionary" item. This logic has been adopted from Fauchart and Gruber (2011).

[18] We repeated our preliminary and confirmatory factor analyses for this smaller sample of N=274 and found stable and very good results for our 15-item scale. For instance, CFI was at 0.966, and RMSEA was at 0.059.

extent as males are less likely to have an interdependent self-construal). We find that being female is positively related to having a pure Communitarian identity (coeff=0.717, $p<0.01$), but didn't find a relation between being a male and having a Missionary identity.

Finally, age may affect founder identity as research in psychology has long confirmed that the prevalence of pro-social behavior increases with age (e.g., van Lange et al., 1997; Eisenberg et al., 1999). Given that pro-social behavior is typically related to altruism and giving in psychology research, we expected that particularly the odds of having a Missionary identity increase with age. Note that although our sample is constituted of students, the relation between identity and age could be expected to be even stronger in the whole population of founders as, although idealism is also an attribute of youth, we should expect people who are more experienced and have already achieved a number of personal goals (which typically arises with age) to be more prone to be altruistic (e.g., Maslow, 1970; Musick & Wilson, 2003). As expected, we find that age is positively related to being a Missionary (coeff=0.096, $p<0.05$) and that age is neither related to being a Communitarian nor a Darwinian.

Out of our control variables, having entrepreneurial parents (coeff=0.489, marginally significant at $p=0.07$) seems to increase the odds of being a Missionary; perhaps children from entrepreneurial parents may benefit from their wealth, as it provides economic leeway and, thus, facilitates embarking on a missionary career (such as in venture philanthropy). Clearly, more research is needed in order to better understand this relationship.

To investigate outcomes of founder social identity – and depending on the nature of our variables and the available data – we assessed correlations, tested the significance of mean differences, and/or estimated linear regression models.[19] For the regression analyses, we used the three founder social identity types as independent variables, whereby we formed continuous identity variables which take the average of the five respective items in order to be able to

[19] Results available from the authors upon request.

understand how the strength of a particular social identity affects outcomes.[20] In order to establish relevant links between founder's social identity and specific outcomes, we build on Fauchart and Gruber's (2011) results and suggestions. Based on these insights and our own data, we can expect differences in founder social identities to be associated with differences in (i) the type of opportunities they exploit, (ii) in the degree of innovativeness of the product or service introduced by the venture, (iii) in the type and number of co-founders they associate with, and (iv) in the causation or effectuation processes they rely on to build their firm.

First, we expect Darwinians, Communitarians, and Missionaries to be attracted by different types of opportunities because they will allow founders to achieve different types of benefits. For instance, Communitarians should be attracted by opportunities that allow them to benefit from being a member of their community. In particular, as some industry sectors are likely to enable the pursuit of Communitarian ambitions more than others, we expect that founders with different social identities are not equally attracted to all types of industries. Our data support this important notion. Founders were asked: "In which sector will your company be active in?" and could choose between 11 commonly accepted industry classifications. We then created dummy variables for all 11 industry sectors (coded "1" in case the firm will be active in that sector, "0" if not) and assessed the respective mean differences between the pure identity types. We find, for instance, that Darwinians are significantly less likely to be attracted by the "education and training" sector than Communitarians or Missionaries (mean differences are significant at $p<0.01$). Communitarians, in turn, are significantly more likely to create their firm in the health services industry than Darwinians ($p<0.01$) and Missionaries ($p<0.1$). These are important findings that encourage more research not only examining opportunity (industry) choice, but also seeking to explain industry-level phenomena (see below).

[20] In these models, we controlled for gender, age, study level, study field, and entrepreneurship education. Due to missing values in some of the control variables, our N=274 (as in our binary logistic regressions reported above).

Then, we expect a founder's social identity to be linked to the firm's innovativeness (measured here as the level of product or service innovation), which is a relevant organizational outcome that could be explained by the type of founder social identity (cf. Fauchart & Gruber, 2011).[21] Yet, note that the previously discussed creativity motive for engaging in entrepreneurship, and product or service innovation may be related in different ways to the identities, because creativity can be exerted on a range of different elements in new firm creation – and not (just) on the venture's new products or services. For instance, while Missionaries score high on creativity, empirical evidence suggests that they tend to exert their creativity on organizational and institutional innovations rather than on products or services – in essence, they seek to establish a new business that can serve as a role model for society-at-large, and showing a better, more responsible way to produce offerings that already exist on the marketplace helps them to achieve this goal; in other words, innovation in products or services may even hamper their efforts. Communitarians, in contrast, tend to focus on product and service innovations. We thus expect the Missionary identity not to be strongly correlated to product or service innovation, despite their strong correlation with the creativity motive for engaging in entrepreneurship, but expect the Communitarian identity to be correlated with product or service innovation, despite their weaker correlation with creativity. In turn, ventures led by Darwinians may not be particularly innovative, but for different reasons. Because of their strong profit and growth orientation, Darwinians tend to pursue more incremental types of innovation that can readily be sold to existing customers (Fauchart & Gruber, 2011). In line with this theorizing, the results of our regression analysis indicate that the Communitarian identity is positively related to innovativeness (coeff=0.144, $p<0.05$). As expected, Darwinian and Missionary identities are unrelated to innovativeness (coeff=0.066, $p>0.2$ for Darwinians; coeff=-0.074, $p>0.2$ for

[21] We asked respondents to assess "How new is the product/service your company will offer in the market (as compared to what is already offered)?", with answers ranging from "new to all customers" (coded 4), "new to majority of customers" (coded 3), "new to minority of customers" (coded 2), and "not new at all" (coded 1).

Communitarians). Consistent with this notion, the Darwinian identity is found to be significantly and positively correlated (coeff=0.146, $p<0.01$) with a dummy variable that indicates whether the product or service is new to the minority of customers (coded "1"), or not (coded "0").

We also expect identity to affect the type of co-founders individuals work with. Founders tend to associate with individuals who have similar social identities, that is, people who share their perception of what it means to be a firm founder (Fauchart and Gruber, 2011). This similarity effect can result from at least two processes. First, people voluntarily search for like-minded others and, second, they just happen to spend time with similar others because their social networks tend to be comprised that way. Here we draw on a GUESSS question that asked for the number of co-founders and then gathered additional information about the background of those co-founders (e.g., it was asked "How many co-founders are female?"). We find, for instance, that Darwinians are significantly less likely to co-found a firm with friends from outside of their university setting than Missionaries (the mean difference is significant at $p<0.01$). Interestingly, Darwinians are also less likely than Missionaries to have females in their founding team ($p<0.01$). These findings are supported by the fact that the dummy variable indicating whether friends from outside university are members of the founding team is positively correlated with the Missionary identity (coeff=0.206, $p<0.01$); the same is true for the dummy variable for female team members (coeff=0.165, $p<0.05$). Comparing Communitarians to Missionaries, the data show that Missionaries are more likely to have friends from outside of their university setting in the founding team (marginally significant at $p<0.1$). Additionally, an interesting correlation arises between being a Communitarian and having co-founders from "professional networks" (coeff=0.181, $p<0.05$). In summary, while Communitarians and Missionaries tend to start firms with people they met outside of their university, Darwinians tend to launch their ventures with colleagues from their own field of study and university. This pattern reminds us of Fauchart and Gruber's (2011) observation that Communitarians tend to associate

with people from their community (e.g., those who share a passion for sports) and Missionaries tend to associate with other activists (e.g., those who fight for the same cause).

In addition, we also compared the number of co-founders between our identity types. This is important because there is mounting evidence that founder social identity affects the formation of entrepreneurial teams (cf. Fauchart & Gruber, 2011; Schjoedt, Monsen, Pearson, Barnett, & Chrisman, 2013). Relative to the other identities, we expect that Darwinians are more reluctant to take on co-founders, as this typically means that they give-up equity in their venture. In contrast, the community ties of Communitarians, respectively the political advocacy required from Missionaries, suggest that these identity types should be positively related to the size of the founding team. Our data lend partial support to these considerations. A regression analysis shows that the Darwinian identity fails to reach significance ($p=0.134$); the coefficient, however, is negative (-0.091). Communitarian and Missionary identities are positively related to the number of co-founders (coeff=0.136, $p<0.05$; coeff=0.106, $p=0.086$).

Then, we expect a theoretical link between founder's social identity and causal/effectual processes (Sarasvathy, 2001; 2008). For the corresponding regressions, we used a three-item causation measure (Cronbach's Alpha=0.8) and a seven-item effectuation measure (Cronbach's Alpha=0.7, also based on Chandler et al., 2011) as dependent variables. Specifically, we expected Darwinians to score high on causation, as such an approach follows a conventional business logic (that is also taught in universities). Given the strong sense of mission towards solving a specific social problem, we would also expect Missionaries to score high on causation, especially as Missionaries will likely have to look ahead and plan in order to raise funds to design and implement their new solution. In contrast, we would expect Communitarians to emphasize effectuation, because people with this identity tend to "swim with the flow" in their community and only over time, once they produce a certain number of goods, will consider new firm creation as they are legally forced to create a business. In line with this theorizing, our results show that being Darwinian or Missionary increases the preference for a causational approach. At the same

time, however, these two identity types are also positively related to effectuation (Darwinian: coeff=0.258, p<0.001 and coeff=0.126, p<0.05; Missionary: coeff=0.188, p<0.01 and coeff=0.295, p<0.001). Thus, Darwinians and Missionaries seem to be opportunistic when starting a firm, although causation has a stronger and more significant effect than effectuation for Darwinians –and the reverse pattern applies to Missionaries. This finding reminds us of work indicating that people may use both causation and effectuation in their firm creation activities (Dew, Read, Sarasvathy, & Wiltbank, 2009). In fact, it is possible that Missionaries pursue a more effectual approach in the very early stage of the venture, yet will need to switch to a more causal approach once they engage with customers and interact with stakeholders. Hence, in this "cycle" Darwinian and Missionary may perform different sequences of causation and effectuation – clearly an opportunity for more research. Finally, our findings show no significant relationship between having a Communitarian identity and causal and/or effectual approaches in entrepreneurship – although the coefficients point in the direction proposed above (causation: negative, effectuation: positive).

In sum, our considerations and analyses on how our scale performs within a system of related constructs further underlines its uniqueness, and opens up interesting avenues for future research.

4.7 Replication and validation in other countries

Scale validation research is often done in a single location, following the implicit assumption that scales tested in one context will be applicable in other contexts as well. However, this does not need to be the case, as people in different geographical contexts may react differently to items. To assess the generalizability of our scale beyond the Alpine region, we took the initial sample of 12'586 founders (see above) and split it into 34 country samples. Within those country samples, we only selected founders of the corresponding nationality (e.g., the Brazilian sample only consists of entrepreneurs with Brazilian nationality) so that we arrive at a clean sample, i.e., one that would not suffer from potentially confounding influences of different cultural backgrounds of respondents. We excluded countries where we had less than 150 responses, given

the recommendation that there should be at least 10 cases for each item in the instrument being used (Hinkin, 2005; Nunnally, 1978; Velicer & Fava, 1998).

This procedure left us with 12 additional countries in addition to the European Alpine region (i.e., Austria, Liechtenstein and Switzerland): Brazil, Germany, Hungary, Italy, Malaysia, Mexico, Netherlands, Poland, Russia, Singapore, and Spain; we included Estonia as well, as the number of cases is only very slightly below the threshold of 150 (146). We did not have a sufficient number of valid cases in any Anglo-American country. Combining responses from the US, Canada, England, and Australia to an "Anglo-American" group led to 125 responses; although this number is below the 10 cases per item rule (8.33), we decided to test our scale in this important cultural context. In all the 12 countries plus in the Anglo-American region, we conducted separate exploratory factor analyses, confirmatory factor analyses, and also assessed the internal consistency and reliability of our scale (see Table 9). As shown in detail below, our scale exhibits strong generalizability and applicability in the majority of countries.

Insert Table 10 about here

Our exploratory factor analyses show that in nine countries (Brazil, Estonia, Germany, Italy, Netherlands, Spain, Hungary, Poland, and Mexico), the two items of the six multi-item constructs always load on the same component only (without cross-loadings >0.4 in magnitude). In six out of those nine countries (Brazil, Estonia, Germany, Italy, Netherlands, and Spain), the scale works to our full satisfaction as three constructs of each founder's social identity type always collapse into one component (as in the Alpine region) with factor loadings of >0.4 and without cross-loadings. In other words, constructs I, II, and III collapse into a "Darwinian component", constructs IV, V, and VI collapse into a "Communitarian component", and constructs VII, VIII, and IX collapse into a "Missionary component".

In three countries, namely Hungary, Russia, and Poland, we observe a few cross-loadings alongside the main pattern indicating that the three Communitarian constructs load on separate

components. More specifically, the basic social motivation of Communitarians (mutual concern for the benefit of others, construct IV) loads on an "own" component, while constructs V and VI load together on the same component. The Darwinian and Missionary constructs, in turn, each collapse into the respective components quite well (despite smaller cross-loadings and with the exception of construct VII in Poland). We conclude that the scale works well also in those countries; the "Communitarian split" we observe is likely not a measurement issue but an indication that the Communitarian identity seems to be multi-dimensional in these former communist countries in Eastern Europe.

Turning to the American continent we observe the following patterns: In Mexico, we see a similar pattern as the one just described: the scale generally works very well, but the Darwinian constructs I and II load on the same component while III loads on a separate component ("Darwinian split"). While we have to be cautions in our interpretation of results pertaining to the Anglo-American group of countries (due to the limited number of responses and the merging of four separate countries), we nevertheless note that the obtained results are highly encouraging, as there are clean Communitarian and Missionary components with only one cross-loading of >0.4. Interestingly, the Darwinian constructs I and III load on the same component while construct II loads on a different one. Put differently, multi-dimensionality of the Darwinian component seems to exist both in Mexico and in the Anglo-American group of countries.

Finally, in our Asian countries, Singapore and Malaysia, the scale does not work as expected. While three components are revealed in Singapore, we find several cross-loadings (A2, C4, and C5), and the items of the same construct (VIII) load on different components. In Malaysia, our nine constructs are clearly distinguishable without cross-loadings. However, only two components are extracted, whereby component 1 comprises all constructs representing "basis for self-evaluation" and "frame of reference" (II, III, V, VI, VIII, and IX) and component 2 covers all three "basic social motivation" constructs (I, IV, and VII).

Turning to confirmatory factor analyses, we find that our 15-item scale generally exhibits good fit indices. In fact, CFI is higher than 0.95 in 11 countries and higher than 0.9 in Estonia and in the Anglo-American countries. RMSEA is lower than 0.08 in nine countries and lower than 0.06 in two countries (Germany and the Netherlands), with Estonia and the Anglo-American region showing slightly higher values. For both Estonia and the Anglo-American group of countries this result may have arisen due to the low number of cases (less than 10 cases per item).

Particularly in those countries where the constructs collapse into their main social identity type components, the Cronbach's Alphas of the five respective items are very encouraging (all at or above 0.75, in most cases >0.8). Also in the countries where two or four components are identified, the respective items exhibit Cronbach's Alphas of at least 0.7 (with the exceptions of the items pertaining to component 4 in Hungary and Mexico). In all countries, the factor loadings of the items that load on multi-item constructs are all at 0.661 or higher.

Taken together, our international analyses reveal that our 15-item scale exhibits fully satisfactory results in terms of factor loadings, Cronbach's Alphas (>0.7), and fit indices (CFI >0.95, RMSEA <0.08) in five countries in addition to the Alpine region: Brazil, Germany, Italy, Netherlands, and Spain. The results for Estonia look similarly good, with only RMSEA being slightly too high (0.089). The scale works relatively well in four more countries, namely Hungary, Russia, Poland, and Mexico. Fit indices and Cronbach's Alphas are good as well there; however, we observe "Communitarian splits" and a few cross-loadings in the first three countries, an item loading on the "wrong" component in Poland, and a "Darwinian split" in Mexico. Although the result in the Anglo-American countries has to be treated in a careful manner, the analyses shown above strongly indicate that the scale is applicable in this region as well.

To sum up, we find that our scale can be rolled in 10 countries and regions, while scholars have to be aware that Darwinian or Communitarian splits may exist, most likely due to cultural

reasons.[22] Given the limited sample size and the merging of four countries, the results in the Anglo-American region have to be treated with care, yet our statistics suggest that the scale is applicable in this region, too. In two countries, Singapore and Malaysia, the scale does not work as expected – mainly due to strong cross-loadings in Singapore and a unique component structure in Malaysia.

To further illustrate the applicability of our scale, Table 11 shows the share of "pure" and "hybrid" identities in the Alpine region and in all the countries where our final 15-item scale works to our full satisfaction (Brazil, Germany, Italy, Netherlands, and Spain) and reasonably well (Estonia, Hungary, Russia, Poland, Mexico, and the Anglo-American region). The respective shares across countries are quite high, which shows that our scale is in fact able to identify both pure and hybrid founder social identities (cf. Fauchart & Gruber, 2011). The remaining share of "unidentified" founder social identities can be regarded as a group of founders whose identities are more scattered across the pure identity types. In this regard, recall that we have defined thresholds that need to be met in order to be able to identify salient social identities.[23] More "relaxed" thresholds will naturally lead to higher shares of identified salient social identities.

Overall, these descriptive results are not only of significance because they indicate the widespread importance and empirical relevance of the three pure and the hybrid social identities that we sought to measure with the present scale building effort. These results are also particularly encouraging, because our sample consists of fairly young entrepreneurs – a

[22] Although the respective five Darwinian or Communitarian items might not load on one component in those countries, they could nevertheless be used together to assess the Darwinian or Communitarian identity type. When combined, the items exhibit a good level of reliability, as Cronbach's Alpha is always 0.7 or higher (e.g., >0.8 in Hungary, Russia, and Poland).

[23] For details about how "pure" identities were derived (following the important notion of identity salience), see footnote 15. Hybrids are respondents who exhibit the corresponding ">5" agreement for all items that belong to the same identity type for at least two different identity types. For instance, a respondent who ticked at least "5" for all Darwinian items (A2, B1, B2, C1, and C2) and for all Communitarian items (A3, A4, B3, C3, and C4) is considered as having a hybrid identity. Also this logic is based on Fauchart and Gruber (2011). The gap to 100 percent in the lowest row is due to founders who neither exhibit a pure identity nor a clear hybrid identity, using the thresholds that we have defined above. For instance, applying lower thresholds for the hybrid identities would produce "sketchier" hybrid identities and increase the share of hybrids.

significant share of these entrepreneurs is likely still in search of their "identity". In other words, we have strong reason to believe that in a sample of more mature founders, the identified shares would be even greater.

Insert Table 11 about here
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5. DISCUSSION AND CONCLUSION

Research on the social identity of firm founders and how it affects entrepreneurship is just beginning to emerge. Because survey-based studies will play an important role in advancing our knowledge in this promising area, our scale can be regarded as an important milestone that can serve as a catalyst for future empirical research.

Our scale building procedure applied theoretical rigor in the conceptual grounding and in item development; while also following rigorous procedures to test and validate the scale, first in the European Alpine region, and then in 13 additional countries and regions. This elaborate procedure resulted in a validated 15-item founder social identity scale that can serve as a valuable resource for researchers conducting survey-based research. As Hinkin (2005, p. 162) points out, the "most important factor in obtaining valid, reliable, and generalizable results using questionnaire surveys, however, is ensuring that the measures used in the survey adequately represent the constructs under examination." This is supported by our encouraging findings when establishing the nomological net of our scale, where we linked our scale to key aspects and variables alluded to in Fauchart and Gruber (2011).

Specifically, our assessment showed that the scale can be applied across many different geographic contexts – for instance in Brazil, Estonia, Germany, Italy, the Netherlands, Russia, and Spain, the Anglo-American region, and in Hungary. Given our encompassing empirical evidence, it seems that the proposed scale can be employed in countries that show cultural similarities to the countries examined in the present research. If researchers in other countries

wish to apply our scale, they will have to be aware that additional or alternative items may have to be generated to capture the primary founder's social identities, and that in some cultures people may not make the same social distinctions – for instance, between the social categories of personal and impersonal others as we have found that in the cases of Singapore and Malaysia (where the Communitarian and the Missionary identity types tend to collapse). As mentioned in chapter 4.1, several GUESSS teams translated the English survey in their own preferred language while being requested to apply a strict back-translation procedure. The 15 items of our final scale are available online (stable URL: *to be added*) in the following languages: Danish, Dutch, English, Estonian, French, German, Hebrew, Hungarian, Italian, Japanese, Polish, Portuguese, Romanian, Russian, Slovenian, and Spanish. Additional translations can be sent to the corresponding author in order to be added to this list.

Because our primary finding indicates that the founder social identity scale is widely applicable across countries, which is a very important feature of any scale (cf. Roersen, Kraaijenbrink, & Groen, 2013), and is also applicable in a general manner to capture social identities in entrepreneurship studies, given that we employed a general sample (e.g., different industries, types of entrepreneurship), the current results can serve as an important platform enabling future research. Furthermore, interesting opportunities for research emerge as we identified some cultural variations that could lead to novel insights on the founder's social identity – firm creation link. Key opportunities also arise for future scale building efforts targeted at founder social identities in specific contexts (e.g., environmental entrepreneurship).

5.1 Avenues for future research

In this section, we discuss several research topics that can be investigated by using the scale developed in our study. A brief summary of these examples is given in Table 12.

Insert Table 12 about here

An important set of research questions relates to the link between the founder's social identity and firm creation processes and outcomes. Building and extending the research by Fauchart and Gruber (2011), scholars could further improve understanding of how firm creation processes differ among founders with different social identities. Fauchart and Gruber (2011) documented important patterns along three primary dimensions that are frequently considered to define the cornerstones of new businesses (resources & capabilities deployed, customer segments served, customer needs addressed) as well as their business models, yet other important differences are likely to exist. For instance, scholars may want to understand how founders with different social identities define and shape the boundaries of their companies, how they create a corporate identity, and how they define and shape their firm's organizational identity.

Another set of major research questions relates to the heterogeneity of firm creation outcomes that are desired by founders with different social identities. Specifically, scholars focus on how founders with different identities define success and firm performance and how their distinct views shape organizational emergence, growth and persistence in entrepreneurship (see Hoang & Gimeno, 2010 for an example relating to role identity theory). We speculate that some Communitarian and Missionary ventures may, in fact, significantly outperform the firms created by Darwinians on a financial dimension, as the former tend to address more novel needs and, thus, are in a leading position should those needs turn into needs of larger customer segments ("movements"). The insights obtained by such performance studies should likely be of interest not only to scholars in entrepreneurship but also in strategic management.

Turning from outcomes to antecedents, we believe that our scale will also allow scholars to shed important light on the antecedents of founders' social identity. For instance, building on our analyses to establish nomological validity, researchers could collect further detailed biographical information from founders including critical incidents in their life to fully understand which factors shape their identities. Along these lines, scholars could also engage in longitudinal research to investigate potential changes in the founder's identity when engaging in multiple

ventures over time, or how founders may change their identities once they attain their aspirations (e.g., Darwinian founders who become rich through entrepreneurship and then search for new meaning in life, such as helping others by creating a foundation dedicated to humanitarian causes).

Focusing on distinct identities – in particular, on Communitarian and Missionary ones that are much less understood –, a number of additional research opportunities arise. For instance, it is intriguing to observe that Communitarians use their community for risk mitigation during the venture creation process (Fauchart & Gruber, 2011), yet we hardly understand how they engage in these activities although insights in this regard are likely to be instructive for the field of entrepreneurship as such given the importance attributed to risk and uncertainty (e.g., Hmieleski & Baron, 2008). Likewise, it would be interesting to understand in some detail how Missionaries engage with politics and seek to change institutions. In turn, these insights could also be of interest to scholars investigating institutional entrepreneurship (Sine & Lee, 2009).

We also want to encourage research that examines "hybrid" identities. As shown in Table 11 and as is also evident in Fauchart and Gruber's (2011) study, a considerable share of founders can be classified as having a hybrid social identity, i.e., one that comprises elements of the primary types. We believe that these hybrid types are particularly intriguing, as such founders are likely torn between different views, beliefs and motivations – which may cause inner turmoil when they make decisions and choose their course of action in entrepreneurship, and which may also create frictions or dissonance with external stakeholders. While we encourage scholars to adopt the operationalization of hybrid identities that we have used, testing alternative thresholds (e.g., "4" or "6") might nevertheless lead to valuable insights about the nature, correlates, and outcomes of hybrid identities. For instance, in a first step one could relate the hybrid identities to the activity- and behavior-related variables discussed for the pure types in Fauchart and Gruber (2011) – such as conducting market studies or choosing sustainable production. Along these lines, it seems that research on the hybrid social identities of founders could help us in developing

a better understanding of hybrid organizations, including hybrid social enterprises, as they combine business aspects with social goals (Battilana & Lee, 2014; Miller et al., 2012).

Another set of opportunities arises when examining founders' social identities across different industries (cf. Roersen et al., 2013). While Fauchart and Gruber's (2011) study was based on data obtained from firms in the sports-related equipment industry, the general nature of the three primary types of founders' social identities makes them relevant for other industry settings as well, albeit we expect to see (and already identified some initial) variations in their relative importance. In other industry settings, the share of Communitarian and Missionary founders may be lower or higher than in the sports-related equipment industry. Extending these notions, it would be interesting to see how the systematic differences in founders' social identities and their venture creation processes play out under different boundary conditions imposed by distinct industry settings. For instance, some industries may be more dynamic than other settings, and the greater dynamism may favor founders with Communitarian identities, given that they tend to pursue more radical innovations. In addition to applying our scale in different industries, future research could also use it in other types of samples. In fact, our study focused on nascent entrepreneurs; it would be interesting to investigate founders' social identities in samples of more experienced entrepreneurs, such as serial entrepreneurs, or founders who have been incredibly successful with their initial venture and then set up (philanthropic) foundations.

Beyond the identity of individual founders, the scale offered in the present research will also facilitate data collection on entrepreneurial teams (cf. Fauchart & Gruber, 2011; Schjoedt et al., 2013). Next to team size and the type of co-founders, as we illustrated in section 4.6, it would be interesting to understand how the level of identity homogeneity in teams affects firm creation and development, including the role of identity conflicts in venture creation. Recall that founders with different identities diverge fundamentally in their views of what is important in entrepreneurship, and this likely results in diverging opinions on how the venture should be launched, whether and how it should grow, and what goals should be attained. More generally,

this type of research may also extend research on teams, and the role that diversity plays in organizations (cf. Williams & O'Reilly, 1998).

Furthermore, scholars may want to link the examination of founder's social identities to important phenomena in entrepreneurship that have only been addressed fairly recently and that still require significant efforts in theory development (Shepherd & Patzelt, 2011). We believe that relating research on founder's social identity to the creation of social or ecological ventures could lead to important advances in our understanding of these types of ventures – precisely because founders with a Communitarian or a Missionary identity have different motivations (in particular, to help others) and expect different benefits from engaging in entrepreneurial activities (e.g., benefits that are more intangible in nature such as social status).

Also, we believe that significant research potential exists when linking the social identity perspective with existing theories and concepts in entrepreneurship. As an example, consider effectuation theory (2001, 2008), as already touched upon when establishing the nomological net of our scale. Future research could engage in more in-depth theorizing and sophisticated empirical analyses how different founder's social identity types, be they pure or hybrid, relate to causation and effectuation strategies. Here, also the subdimensions of effectuation (cf. Chandler et al., 2011) could be explored separately in some detail. Likewise, it is interesting to link social identity research to research on values in entrepreneurship, such as by using Shepherd and colleagues' (2009) measure of the fundamental values that underlie sustainable development. For instance, a person's values are likely to affect that person's social motivations in entrepreneurship.

Moving beyond the firm level, one could apply the social identity scale to examine antecedents, processes and outcomes on higher levels of analysis such as the birth and evolution of industries, and the growth of regions and countries. For instance, it seems that Communitarian founders could play a special role in the birth of industries, given that they pioneer product categories and are less focused on financial returns. In terms of the growth of regions and

countries, it seems that the composition of the entrepreneurial force of a region or country (i.e., the share of Darwinians, Missionaries, Communitarians) will have an impact on regional or national growth and innovativeness.

We also want to point to the important research opportunities arising from our finding that the applicability of the founder social identity scale is dependent on the cultural context – and, in particular, on how individuals understand the social dimension of their lives. In this vein, research on identity formation can serve as a valuable literature to improve understanding as to how and why cultures may differ in their conception of social others, in particular since "the self is shaped, in part, through interaction with groups." (Triandis, 1989, p. 506). In particular, Triandis (1989) argued that the self will be shaped by cultural variables, including the complexity of the culture a person lives in, its individualistic or collectivistic nature, and its homogeneity or heterogeneity. For instance, looking at individualism-collectivism (Hofstede, 1980; Oyserman, Coon, & Kemmelmeier, 2002), Brewer and Chen (2007) pointed out that in Western cultures (e.g., the United States), the self-concept is defined primarily based on separation from others and individual autonomy, whereas in Eastern cultures (e.g., China), the core of an individual's self-definition is based on interdependence with others and social embeddedness. These observations are in line with the findings of the present paper, as evidenced by the collapsing identities in Singapore and Malaysia and a "Communitarian split" in Eastern European former communist countries (Hungary, Poland, and Russia). Considering the importance of the founder's social identity for founding processes and outcomes, and the role of culture in shaping social identity, we not only want to encourage researchers to improve understanding of how cultural variations affect founder's social identity but also how the existing measurement instrument can be adapted to capture founder's social identity types in particular cultural contexts (see below). The increasing cultural diversity observed in many countries makes this undertaking more challenging but also more interesting (Phinney, 2000).

Finally, we want to encourage additional scale development efforts to capture social identities of founders in specific contexts. As mentioned above, scholars could develop specific scales to capture identities in the specific context of ecological entrepreneurship. While the distinction between a Communitarian and a Missionary orientation still matter in important ways in specific contexts, such scale development efforts could capture additional aspects (e.g., meanings) that are highly-context specific. In other words, such scales can complement the scale developed by us.

5.2 Limitations

Like any study, this research is not without limitations (cf. Aguinis & Edwards, 2014). As discussed, in testing our scale in an unusually large set of countries across the globe, we could not only find evidence of its wide applicability but also identified important cultural contingencies. Related to the applicability of our scale, we reiterate here that the size of our sample in the Anglo-American region is too small to meet the 10 respondents per item rule. While the results are nevertheless encouraging, indicating applicability also in that region, this initial claim is subject to future research projects that collect more data in the corresponding English-speaking countries to further validate our scale in this geographical context. Ideally, the scale should be validated on the country-level.

Also, we encourage research that further develops our scale for applicability in cultural contexts that were either not covered in the present research and where one could assume that social norms and perceptions are likely to diverge from the ones discussed here, or where the present research indicated that additional or alternative items need to be developed to capture the primary types of founder social identities. This methodological implication may also be of relevance for other scale development studies, especially those that measure constructs rooted in or linked to social norms and perceptions.

Finally, we note that some authors have started developing role identity constructs in entrepreneurship (Farmer et al., 2011). As we did not measure role identities in our data

collection effort, we have not been able to empirically link social identities and role identities, nor could we assess the discriminant validity of our scale and role identity measures.

5.3 Conclusions

We began this paper by noting that entrepreneurship can be regarded as an important manifestation of the human self as it allows founders to put a lot of "themselves" into their enterprising activities, and that new firms become important reflections of the meanings that founders associate with entrepreneurship. In this study, we offer a validated scale that can help researchers in their quest for an improved understanding of founders as enterprising individuals as well as of firm creation processes and outcomes. Ultimately, insights in this vein may not only advance our knowledge of emerging firms but also of established organizations, given that the founder's imprint on his or her organization is of a profound nature and, thus, may persist for significant time spans – even after the founder has left the organization.

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FIGURE 1: Different Levels of Social Inclusiveness in Founders' Social Identities

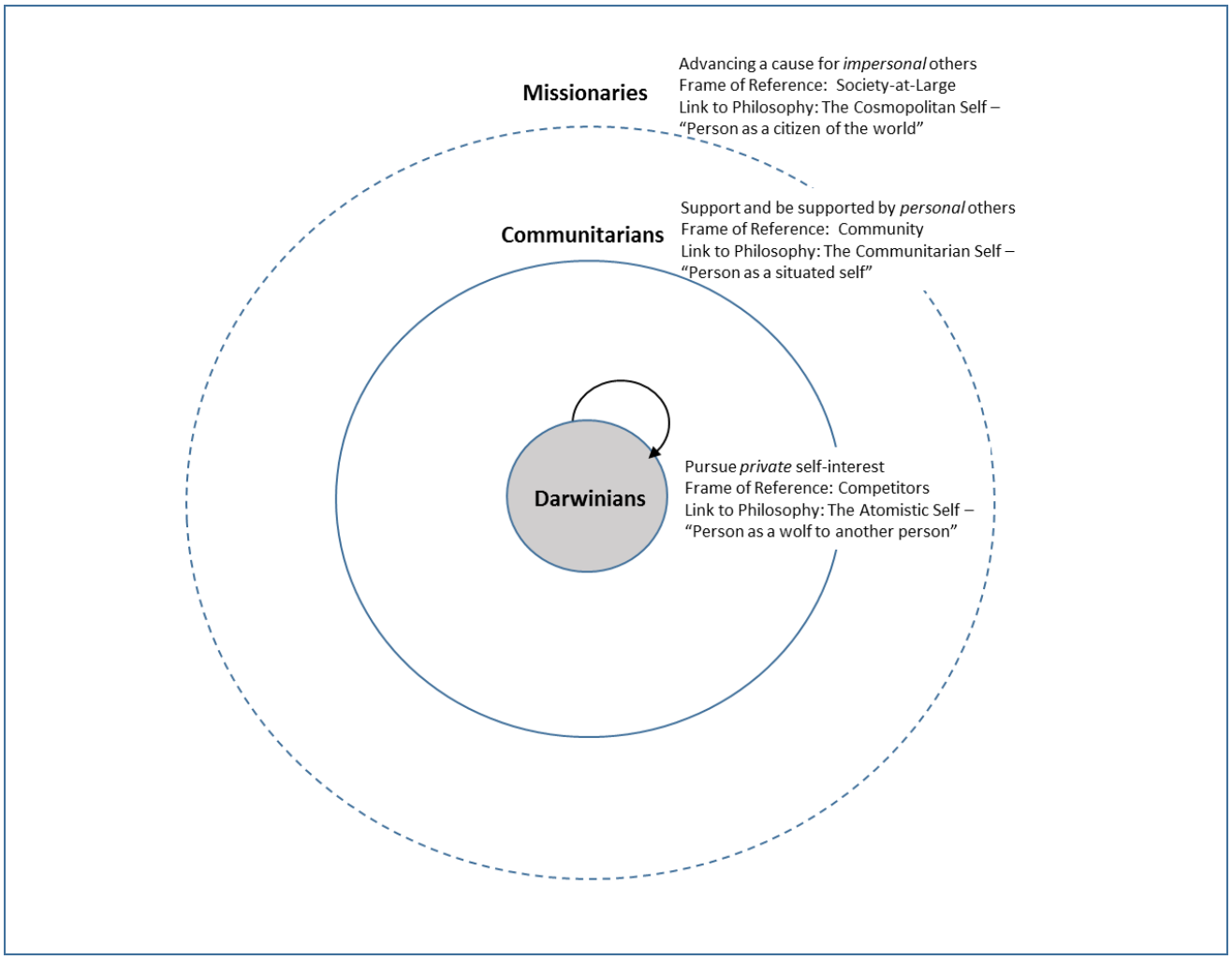

TABLE 1: Social Identities of Firm Founders

Darwinian Founders	Founders with this type of social identity are highly self-interested when engaging with others in firm creation (construct I, see Table 2). They derive self-worth by behaving and acting in ways that are congruent with a professional "business-school" approach to management (construct II) and view the competition as their primary reference in the social space, as competitors pose a threat to the development of their own ventures (construct III).
Communitarian Founders	Founders with this type of social identity want to support and to be supported by their personal social community (construct IV). They derive self-worth primarily from being able to provide products and services that help to advance their social community (construct V) and view the community as the primary social reference when setting up their firms (construct VI).
Missionary Founders	Founders with this type of social identity want to advance a particular cause (construct VII). They derive self-worth from being able to behave and act in a responsible manner that allows them to pursue their political vision and establish a better world (construct VIII). They view society-at-large as their primary reference in the social space (construct IX).

Cf. Fauchart and Gruber (2011).

TABLE 2

Overview of Founder Social Identity Types, Dimensions, Constructs, and Initial Items

Founder social identity type	Social identity dimension	Constructs / no. / item			Item text
Darwinian	Basic social motivation	Personal interest	I		*I will create my firm in order…*
				A1	to make money and become rich.
				A2	to advance my career in the business world.
	Basis for self-evaluation	Being a competent professional	II		*As a firm founder, it will be very important to me…*
				B1	to operate my firm on the basis of solid management practices.
				B2	to have thoroughly analyzed the financial prospects of my business.
	Frame of reference	Competitors	III		*When managing my firm, it will be very important to me…*
				C1	to have a strong focus on what my firm can achieve vis-à-vis the competition.
				C2	to establish a strong competitive advantage and significantly outperform other firms in my domain.
Communitarian	Basic social motivation	Mutual concern for the benefit of known others	IV		*I will create my firm in order…*
				A3	to solve a specific problem for a group of people that I strongly identify with (e.g., friends, colleagues, club, community).
				A4	to play a proactive role in shaping the activities of a group of people that I strongly identify with.
	Basis for self-evaluation	Being true to similar others	V		*As a firm founder, it will be very important to me…*
				B3	to provide a product/service that is useful to a group of people that I strongly identify with (e.g., friends, colleagues, club, community).
				B4	to be able to express to my customers that I fundamentally share their views, interests and values.
	Frame of reference	Similar others / specific social group	VI		*When managing my firm, it will be very important to me…*
				C3	to have a strong focus on a group of people that I strongly identify with (e.g., friends, colleagues, club, community).
				C4	to support and advance a group of people that I strongly identify with.
Missionary	Basic social motivation	Advancing a cause	VII		*I will create my firm in order…*
				A5	to solve a societal problem that private businesses usually fail to address (e.g., social injustice, destruction of environment).
				A6	to play a proactive role in changing how the world operates.
	Basis for self-evaluation	Contributing to make the world a better place	VIII		*As a firm founder, it will be very important to me…*
				B5	to be a highly responsible citizen of our world.
				B6	to make the world a "better place" (e.g., by pursuing social justice, protecting the environment).
	Frame of reference	Society at large	IX		*When managing my firm, it will be very important to me…*
				C5	to have a strong focus on what the firm is able to achieve for society-at-large.
				C6	to convince others that private firms are indeed able to address the type of societal challenges that my firm addresses (e.g., social justice, environmental protection).

Note: all items anchored at 1=strongly disagree and 7=strongly agree.

TABLE 3

Founder Demographics and New Venture Characteristics in the Alpine Region

Dimension	**Value(s)**
Age	25.34 (mean), 4.47 (standard deviation)
Gender	60.8% male
Study level	Undergraduate level (59.9%)
	Graduate level (34.8)
Main field of study	Business / Management (31.4%)
	Engineering / Architecture (11%)
	Medicine / Health Sciences (8.5%)
Main sector of the venture	IT & Communication (18%)
	Tourism & Gastronomy (11%)
	Health Services (9.5%)
Share of personal equity	56.21% (mean), 32.14 (S.D.)
Number of co-founders	1 Co-founder (41.1%)
	0 Co-founder (27.5%)

N=282

TABLE 4

Rotated Pattern Matrix of Initial 18-Item Scale in the Alpine Region

Iden-tity	Con-struct	Item	Item text	Component			
				1	2	3	4
DAR	**I**	**A1**	*I will create my firm in order…* to make money and become rich.	-.024	**.477**	.043	**.579**
		A2	*I will create my firm in order…* to advance my career in the business world.	-.035	.371	-.093	**.723**
	II	**B1**	*As a firm founder, it will be very important to me…* to operate my firm on the basis of solid management practices.	.056	**.681**	-.038	.188
		B2	*As a firm founder, it will be very important to me…* to have thoroughly analyzed the financial prospects of my business.	.080	**.695**	-.117	.065
	III	**C1**	*When managing my firm, it will be very important to me…* to have a strong focus on what my firm can achieve vis-à-vis the competition.	-.021	**.820**	.066	-.019
		C2	*When managing my firm, it will be very important to me…* to establish a strong competitive advantage and significantly outperform other firms in my domain.	-.065	**.769**	.051	.071
COM	**IV**	**A3**	*I will create my firm in order…* to solve a specific problem for a group of people that I strongly identify with (e.g., friends, colleagues, club, community).	.149	-.160	**-.667**	.186
		A4	*I will create my firm in order…* to play a proactive role in shaping the activities of a group of people that I strongly identify with.	.155	-.231	**-.667**	.262
	V	**B3**	*As a firm founder, it will be very important to me…* to provide a product/service that is useful to a group of people that I strongly identify with (e.g., friends, colleagues, club, community).	-.051	.095	**-.772**	-.248
		B4	*As a firm founder, it will be very important to me…* to be able to express to my customers that I fundamentally share their views, interests and values.	.146	**.467**	-.347	-.344
	VI	**C3**	*When managing my firm, it will be very important to me…* to have a strong focus on a group of people that I strongly identify with (e.g., friends, colleagues, club, community).	-.147	.112	**-.860**	-.026
		C4	*When managing my firm, it will be very important to me…* to support and advance a group of people that I strongly identify with.	.029	.061	**-.801**	-.002
MIS	**VII**	**A5**	*I will create my firm in order…* to solve a societal problem that private businesses usually fail to address (e.g., social injustice, destruction of environment).	**.638**	-.303	-.146	.194
		A6	*I will create my firm in order…* to play a proactive role in changing how the world operates.	**.733**	-.210	-.032	.182
	VIII	**B5**	*As a firm founder, it will be very important to me…* to be a highly responsible citizen of our world.	**.735**	.277	.031	-.112
		B6	*As a firm founder, it will be very important to me…* to make the world a "better place" (e.g., by pursuing social justice, protecting the environment).	**.900**	.048	.106	-.183
	IX	**C5**	*When managing my firm, it will be very important to me…* to have a strong focus on what the firm is able to achieve for society-at-large.	**.729**	.050	-.047	.005
		C6	*When managing my firm, it will be very important to me…* to convince others that private firms are indeed able to address the type of societal challenges that my firm addresses (e.g., social justice, environmental protection).	**.771**	.045	-.007	-.018

N=282. Principal component analysis with Oblimin rotation and Kaiser normalization. Note: Loadings with >0.4 in magnitude in bold.

TABLE 5

Rotated Pattern Matrix of Final 15-Item Scale (Alpine Region)

Iden-tity	Con-struct	Item	Item text	Component		
				1	2	3
DAR	**I**	**A2**	*I will create my firm in order…* to advance my career in the business world.	-.023	**.507**	-.127
	II	**B1**	*As a firm founder, it will be very important to me…*to operate my firm on the basis of solid management practices.	.078	**.756**	-.017
		B2	*As a firm founder, it will be very important to me…*to have thoroughly analyzed the financial prospects of my business.	.092	**.725**	-.085
	III	**C1**	*When managing my firm, it will be very important to me…*to have a strong focus on what my firm can achieve vis-à-vis the competition.	-.013	**.827**	.114
		C2	*When managing my firm, it will be very important to me…*to establish a strong competitive advantage and significantly outperform other firms in my domain.	-.064	**.812**	.089
COM	**IV**	**A3**	*I will create my firm in order…*to solve a specific problem for a group of people that I strongly identify with (e.g., friends, colleagues, club, community).	.130	-.099	**-.695**
		A4	*I will create my firm in order…*to play a proactive role in shaping the activities of a group of people that I strongly identify with.	.141	-.130	**-.709**
	V	**B3**	*As a firm founder, it will be very important to me…*to provide a product/service that is useful to a group of people that I strongly identify with (e.g., friends, colleagues, club, community).	-.063	.034	**-.741**
	VI	**C3**	*When managing my firm, it will be very important to me…*to have a strong focus on a group of people that I strongly identify with (e.g., friends, colleagues, club, community).	-.146	.134	**-.848**
		C4	*When managing my firm, it will be very important to me…*to support and advance a group of people that I strongly identify with.	.034	.086	**-.799**
MIS	**VII**	**A6**	*I will create my firm in order…*to play a proactive role in changing how the world operates.	**.711**	-.180	-.085
	VIII	**B5**	*As a firm founder, it will be very important to me…*to be a highly responsible citizen of our world.	**.750**	.193	.035
		B6	*As a firm founder, it will be very important to me…*to make the world a "better place" (e.g., by pursuing social justice, protecting the environment).	**.897**	-.028	.091
	IX	**C5**	*When managing my firm, it will be very important to me…*to have a strong focus on what the firm is able to achieve for society-at-large.	**.738**	.054	-.068
		C6	*When managing my firm, it will be very important to me…*to convince others that private firms are indeed able to address the type of societal challenges that my firm addresses (e.g., social justice, environmental protection).	**.769**	.008	-.031

N=282. Principal component analysis with Oblimin rotation and Kaiser normalization. DAR=Darwinians, COM=Communitarians, MIS=Missionaries. Loadings with >0.4 in magnitude in bold.

TABLE 6

Means, Standard Deviations, and Pearson Correlations of Founder Identities, Constructs, and Items

Item / construct / identity	Mean	S.D.	A2	B1	B2	C1	C2	A3	A4	B3	C3	C4	A6	B5	B6	C5	C6	II	III	IV	VI	VIII	IX	DAR	COM
A2	5.09	1.66	1																						
B1	4.61	1.76	.332**	1																					
B2	5.41	1.44	.307**	.573**	1																				
C1	5.18	1.56	.241**	.469**	.437**	1																			
C2	5.56	1.68	.320**	.414**	.401**	.724**	1																		
A3	4.38	1.98	.085	.053	.082	-.023	-.086	1																	
A4	4.34	1.96	.093	.073	.044	-.093	-.101	.618**	1																
B3	5.42	1.62	.036	.024	.204**	.056	.073	.426**	.356**	1															
C3	4.75	1.77	.175**	.171**	.211**	.106	.107	.405**	.411**	.555**	1														
C4	4.88	1.73	.156**	.178**	.197**	.019	.057	.407**	.494**	.484**	.713**	1													
A6	4.28	2.1	.036	-.084	.012	-.181**	-.143*	.298**	.313**	.149*	.105	.195**	1												
B5	5.26	1.67	.095	.182**	.209**	.101	.038	.230**	.242**	.152*	.104	.208**	.348**	1											
B6	4.71	1.94	-.097	.035	.083	-.034	-.106	.217**	.195**	.146*	.057	.174**	.566**	.673**	1										
C5	5.04	1.65	.071	.128*	.062	.017	-.010	.249**	.290**	.121*	.164**	.322**	.469**	.427**	.525**	1									
C6	4.61	1.91	.026	.025	.063	-.012	-.002	.230**	.239**	.166**	.151*	.243**	.498**	.424**	.576**	.574**	1								
II	5.01	1.42	.362**	.910**	.861**	.512**	.459**	.074	.067	.118*	.213**	.210**	-.046	.219**	.064	.111	.047	1							
III	5.37	1.5	.303**	.474**	.450**	.923**	.934**	-.060	-.105	.070	.115	.041	-.174**	.073	-.077	.003	-.007	.522**	1						
IV	4.36	1.77	.099	.070	.070	-.064	-.104	.900**	.899**	.434**	.454**	.501**	.340**	.263**	.229**	.299**	.261**	.079	-.091	1					
VI	4.81	1.62	.179**	.189**	.221**	.068	.089	.439**	.488**	.562**	.927**	.924**	.162**	.168**	.124*	.262**	.212**	.229**	.085	.515**	1				
VIII	4.98	1.65	-.009	.113	.154**	.031	-.044	.244**	.237**	.162**	.086	.207**	.509**	.900**	.928**	.524**	.553**	.148*	-.008	.267**	.158**	1			
IX	4.83	1.58	.053	.082	.071	.002	-.007	.269**	.296**	.164**	.177**	.315**	.546**	.479**	.622**	.869**	.904**	.086	-.003	.314**	.265**	.608**	1		
DAR	5.17	1.19	.606**	.769**	.727**	.780**	.783**	.029	.005	.102	.209**	.165**	-.100	.168**	-.036	.074	.026	.844**	.841**	.019	.203**	.064	.054	1	
COM	4.75	1.39	.142*	.129*	.186**	.012	.005	.762**	.768**	.716**	.792**	.798**	.283**	.247**	.208**	.303**	.270**	.174**	.009	.850**	.859**	.247**	.321**	.128*	1
MIS	4.78	1.45	.030	.063	.105	-.038	-.065	.315**	.328**	.189**	.147*	.289**	.761**	.722**	.860**	.755**	.792**	.092	-.056	.358**	.235**	.870**	.873**	.024	.336**

N=282. * = p<0.05, ** = p<0.01. S.D.=standard deviation, DAR=Darwinians, COM=Communitarians, MIS=Missionaries. Constructs I, V, and VII are not listed because those are single-item constructs whose items already appear in the table (items A2, B3, and A6, respectively).

TABLE 7

Convergent Validity: Pearson Correlations between Founder Social Identity types, Constructs, and other Variables

	D	C	M	I	II	III	IV	V	VI	VII	VIII	IX
Challenge motive	.206**	.170**	.158**	.138*	.146*	.193**	.149*	.081	.162**	.071	.095	.215**
Creativity motive	.101	.146*	.249**	.165**	.009	.099	.199**	.044	.073	.262**	.119*	.272**
Power motive	.208**	.150*	.151*	.268**	.128*	.141*	.198**	.002	.105	.138*	.069	.181**
Have a challenging job (challenge)	.232**	.160**	.154**	.173**	.196**	.177**	.116	.045	.193**	.084	.081	.212**
Have an exciting job (challenge)	.111	.128*	.113	.052	.041	.150*	.140*	.097	.073	.034	.082	.150*
Freedom (power)	-.042	.020	.160**	.074	-.087	-.042	.072	-.076	.001	.152*	.072	.189**
Independence (power)	.066	.125*	.082	.138*	.003	.051	.166**	.013	.080	.062	.016	.131*
Be your own boss (power)	.136*	.149*	.115	.146*	.085	.107	.176**	.079	.088	.124*	.034	.146*
Have power to make decisions (power)	.194**	.069	.125*	.252**	.157**	.095	.121*	-.036	.033	.146*	.062	.124*
Have authority (power)	.334**	.159**	.075	.322**	.249**	.248**	.169**	.013	.150*	.035	.063	.081
Realize your dream (creativity)	.045	.121*	.111	.184**	.007	-.020	.199**	.025	.030	.153*	-.003	.156**
Create something (creativity)	.104	.080	.247**	.129*	.007	.128*	.109	.036	.035	.272**	.145*	.233**
Take advantage of creative needs (creativity)	.087	.145*	.231**	.092	.004	.117	.174**	.040	.100	.204**	.131*	.257**
Entrepreneurial Self-Efficacy	.279**	.152*	.243**	.249**	.217**	.209**	.184**	.040	.105	.211**	.112	.298**

N=282. D=Darwinians, C=Communitarians, M=Missionaries. For construct labels cf. Table 2. *=p<0.05, **=p<0.01.

TABLE 8

Model Specifications and Fit Indices

Model specification (number of factors)	**9 (M9)**	**6 (M6)**	**3 (M3)**	**2 (M2)**	**1 (M1)**
CFI	0.965	0.834	0.832	0.614	0.384
RMSEA	0.06	0.109	0.107	0.16	0.201
Chi-square	114.647	397.577	366.462	729.499	1113.852
Degrees of freedom	57	92	87	89	90
Delta χ^2 (degree of freedom) significance test (vs. M9)		282.93(35)***	251.815(30)***	614.852(32)***	999.205(33)***
Delta χ^2 (degree of freedom) significance test (reference model)			31.115(5)*** (vs. M6)	363.037(2)*** (vs. M3)	384.353(1)*** (vs. M2)

TABLE 9

Discriminant Validity: Pearson Correlations between Founder Social Identity Types, Constructs, and other Variables

	D	C	M	I	II	III	IV	V	VI	VII	VIII	IX
Locus of control	.199**	.064	.017	.250**	.122*	.141*	.090	.006	.036	.032	-.019	.036
Subjective norm	.185**	.041	.060	.129*	.150*	.152*	.010	.022	.066	.011	.036	.091
Risk perception	.042	.046	.062	.037	.020	.043	.042	.032	.036	.069	.066	.027
Uncertainty avoidance	.056	.006	.009	-.026	.063	.065	-.014	-.013	.035	-.024	.069	-.034

N=282. * = p<0.05, ** = p<0.01.

TABLE 10

Scale Validation Results: Rotated Pattern Matrices

Item / construct		Brazil			Estonia			Germany			Italy			Netherlands			Spain			Hungary				Russia				Poland				Mexico				Anglo-American				Singapore			Malaysia	
		1	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*1*	*2*	*3*	*4*	*1*	*2*	*3*	*4*	*1*	*2*	*3*	*4*	*1*	*2*	*3*	*4*	*1*	*2*	*3*	*4*	*1*	*2*	*3*	*1*	*2*
A2	I		.595			.683			.624			.612			.628			.575			.667		.402		.722				.517	.454					.413		.735			.469		.640		.571
B1	II		.745			.646			.624			.726			.726			.770			.649				.527				.800						.877				.718	.814			.577	
B2			.752			.704			.700			.747			.741			.777			.680				.599				.826						.764				.792	.857			.529	
C1	III		.832			.847			.812			.785			.754			.802			.842				.880				.806					.789			.793			.886			.921	
C2			.769			.711			.769			.730			.724			.800			.787				.847				.768					.661			.843			.891			.946	
A3	IV	.763			.833					-.713	.786					-.642			.846				.747			-.564	.454			.744			-.777			.719					-.920			.830
A4		.716			.795					-.691	.746					-.658			.861				.793				.633			.835			-.825			.699					-.892			.918
B3	V	.718			.774					-.708	.731					-.823			.501			-.674				-.714					-.576		-.648			.868				.592			.656	
C3	VI	.821			.815					-.817	.842					-.895			.568			-.891				-.928					-.782		-.790			.838				.650			.943	
C4		.734			.835					-.821	.772					-.793			.561			-.834				-.808					-.709		-.783			.837				.511		-.424	.929	
A6	VII			.620			-.626	.712					.766	.818			.629			.811				.556			.532			.606		.652						.754			-.878			.765
B5	VIII			.827			-.767	.775					.752	.856			.769			.571				.785				.681				.843						.746		.474			.596	
B6				.939			-.916	.923					.828	.911			.889			.908				.947				.849				.842						.849				-.468	.523	
C5	IX			.525			-.720	.709					.592	.757			.663			.690				.735				.686				.729				.465		.445		.457		-.418	.852	
C6				.676			-.773	.825					.617	.756			.777			.785				.758				.797				.686						.747				-.456	.746	
Alpha		0.85	0.81	0.84	0.87	0.79	0.86	0.86	0.75	0.82	0.84	0.77	0.81	0.90	0.76	0.86	0.85	0.80	0.85	0.85	0.78	0.83	0.65	0.86	0.80	0.81	0.81	0.84	0.83	0.72	0.85	0.81	0.85	0.74	0.54	0.90	0.77	0.86	0.71	0.90	0.85	0.87	0.96	0.85
N		1315			146			350			368			486			602			1487				472				2512				155				125				516			614	
Chi-sq.		398.241***			123.212***			116.030***			134.054***			128.792***			225.315***			485.435***				162.845***				798.682***				98.540***				131.975***				235.188***			270.909***	
CFI		0.965			0.946			0.974			0.966			0.973			0.964			0.958				0.970				0.963				0.967				0.932				0.964			0.975	
RMSEA		0.067			0.089			0.054			0.061			0.051			0.07			0.071				0.062				0.072				0.068				0.103				0.078			0.078	
F.L.		0.755-0.923			0.698-0.975			0.661-0.989			0.674-0.897			0.703-0.903			0.738-0.9			0.674-0.882				0.733-0.928				0.716-0.886				0.740-0.976				0.687-0.936				0.769-0.911			0.811-0.914	

Note: The upper part of the table is based on a factor analysis done in SPSS. Factor loadings <0.4 are not shown to improve readability. The fit indices in the lower part of the table stem from a separate CFA analysis in AMOS. F.L. refers to the range of the factor loadings of the items that load on a multi-item construct in our 15-item scale.

TABLE 11

Founder Social Identity Types and Hybrid Identities Across Countries

	AR	BRA	GER	ITA	NED	ESP	EST	HUN	RUS	POL	MEX	AAR
Pure Darwinians	17.3	21.2	14.0	16.8	18.6	16.0	21.1	16.9	17.8	22.8	14.0	19.2
Pure Communitarians	9.2	2.3	8.3	6.2	8.0	4.0	4.1	6.5	2.1	2.0	0.6	8.8
Pure Missionaries	13.1	5.3	11.1	12.4	7.8	8.4	8.8	6.3	8.9	6.1	7.0	8.0
Total Pures	*39.6*	*28.8*	*33.4*	*35.4*	*34.4*	*28.3*	*34.0*	*29.7*	*28.8*	*31.0*	*21.7*	*36.0*
D/C Hybrids	5.3	7.2	3.1	4.9	2.7	6.4	2.7	8.0	5.2	5.1	5.1	6.4
D/M Hybrids	3.5	12.1	5.1	10.0	4.5	9.9	3.4	6.7	7.1	10.9	15.3	6.4
C/M Hybrids	4.9	5.5	11.4	11.6	11.9	7.6	6.8	8.0	5.2	4.3	5.7	8.0
D/C/M Hybrids	11.3	26.9	4.9	14.9	10.0	22.2	12.2	18.7	18.7	20.0	45.2	28.0
Total Hybrids	*25.1*	*51.8*	*24.6*	*41.4*	*29.1*	*46.1*	*25.2*	*41.4*	*36.1*	*40.3*	*71.3*	*48.8*
Total Pures & Hybrids	*64.7*	*80.6*	*58.0*	*76.8*	*63.5*	*74.5*	*59.2*	*71.1*	*64.9*	*71.3*	*93.0*	*84.8*

Note: Numbers are percent of total sample in the respective countries. AR=Alpine Region, AAR=Anglo-American Region.

TABLE 12

Opportunities for Future Research (Examples)

Firm creation processes	• Social identity of founders and the link to key aspects of firm creation processes (e.g., how founders with different social identities identify distinct opportunities, how they define and shape the boundaries of their companies, how they create a corporate identity, and how they define the identities of their organizations) • Tensions in hybrid types of founder social identities, and their impact on firm creation processes • Under different boundary conditions (e.g., the role of founder's social identity across different industry settings)
Firm creation outcomes	• Moving beyond entrepreneurship's focus on financial firm performance as an outcome (e.g., how do founders with different social identities evaluate and measure their performance, how long do they persist in entrepreneurship)
Founder's social identity over time	• Antecedents of founder's social identity (e.g., why do founders diverge in their social identities?) • Change of founder's social identity over time (although social identities are fundamental characteristics of individuals, they may change over time due to critical incidents etc.; e.g., scholars can investigate how founder's social identity may change over time in serial entrepreneurship)
Improve theoretical understanding of key phenomena	• High-growth entrepreneurship • Social entrepreneurship • Ecopreneurship • Radical innovation & entrepreneurship • Etc.
Extension of existing theories & concepts	• Given the fundamental nature of founders' identities, insights in this regard are likely of relevance for existing theories (e.g., effectuation theory) and concepts in entrepreneurship (e.g., the relationship of values and founder social identities)
Relationship with higher levels of analysis	• Team level (e.g., how do entrepreneurial teams diverge in terms of the individuals' social identities, the role of conflict among founders with different social identities, team evolution etc.) • Industry level (e.g., how do founders with different identities shape the birth and evolution of industries?) • Regional/national level (e.g., how does the relative prevalence of different types of social identities of founders affect regional/national growth and innovativeness?) • Cultural level (e.g., how do cultural influences shape social identities in entrepreneurship and the distribution among Darwinians, Communitarians, and Missionaries)