

RESEARCH ARTICLE



Attractiveness, ethnicity, and stage financing: exploring heuristics in venture capital staging

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ABSTRACT

Understanding heuristics in stage financing is imperative, given the consequences of staging for both new venture entrepreneurs and VC investors. This study documents how entrepreneurs' physical attractiveness affects VCs' staging intensity during the early stages of the funding process, while taking into account the ethnic constellation of a given VC – entrepreneur dyad. Using a dataset for a representative sample of 231 European IT-ventures, the study finds that physical attractiveness of the lead entrepreneur and the ethnic constellation of a given VC-entrepreneur dyad independently and jointly affect a VC's staging intensity during the early stages of the financing process. These findings were subjected to a two-stage least squares analysis and Heckman selection models.

KEYWORDS

Venture capital; attractiveness; ethnicity; heuristics; biases

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1. Introduction

Being inherently risky endeavours, VCs often opt for a stage financing approach for the ventures they selected to fund and develop. Stage financing involves the periodic disbursement of capital to an entrepreneurial venture, allowing the VC to efficiently monitor a venture's progress while maintaining the option to abandon (Sahlman 1990). The information that VCs gather during the monitoring of ventures helps them 'avoid throwing money at bad projects' (Wang and Zhou 2004, 132). Making sound staging decisions early on is paramount as it affects VCs' returns on investment (Gompers, Kovner, and Lerner 2009). VCs' staging decisions also have societal relevance, given their impact on new venture survival and the importance of new ventures for economic renewal (Engel 2004; De Vries et al. 2017).

In shaping their staging approaches, VCs have been suggested to rationally balance the costs of monitoring with those of staging (Tian 2011). In the words of Gompers (1995, 1462), VCs rationally 'weigh potential agency and monitoring costs when determining how frequently they should re-evaluate projects and supply capital.' However, recent studies found VCs' decision-making to be far from objective. VCs appear to strongly rely on heuristics in the context of venture screening and selection, as they face new ventures that lack track records and tangible assets (Franke et al. 2006; Bengtsson and Hsu 2015). As staging decisions are inherently probabilistic and uncertain as well, this study

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challenges the assumption that staging is a rational balancing act merely involving monitoring- and staging costs.

Conceptually speaking, VCs' staging decisions have been approached as slow, controlled and reflective cognitive operations (denoted as System 2 processing). In so doing, empirical inquiries into staging have disregarded the well accepted view that cognitive processes follow a dual-process model involving fast, automatic, subconscious and intuitive cognitions as well, known as System 1 processing (Chaiken and Trope 1999). According to Kahneman and Frederick (2002, 53), 'judgement is mediated by a heuristic when an individual assesses a specified target attribute of a judgement object by substituting another property of that object – the heuristic attribute – which comes more readily to mind.' Such attribute substitution is known to introduce systematic biases. System 1-based processing most likely takes place when the target attribute is difficult to fathom or access, and a heuristic attribute is easily accessible. Given that 1) trust between the VC and entrepreneur plays a key-role in staging, 2) each staging round introduces new uncertainties, risks and information asymmetries, and 3) staging decisions inherently are of a probabilistic nature, heuristic decision-making is likely to take place (Tversky and Kahneman 1974). As such, this study explores the potential interplay between System 1 and System 2-based cognitions in the context of staging. The current study is the first to systematically explore the applicability of the dual-process model in the early stages of the funding process, and does so by focusing on two heuristic attributes known to affect VCs' screening and selection decisions, namely 1) the halo-effect and 2) the similarity-effect.

Entrepreneurs' physical attractiveness is used to proxy the halo effect. The preference for attractive others, called the 'attractiveness halo', has been shown to influence VCs' selection decisions to the advantage of the handsome entrepreneur (Brooks et al. 2014; Baron, Markman, and Bollinger 2006). This finding corresponds with a substantial body of evidence on how physical attractiveness (henceforth attractiveness) influences the degree to which individuals are favourably perceived, evaluated, and treated (Langlois et al. 2000; Todorov et al. 2005). But whether the attractiveness halo will engender differential staging decisions as well is far from evident. On one hand, the attractiveness halo has predominantly been studied in the context of relationship *formation*. While this lacunae has consistently been reiterated in attractiveness literature (e.g., Anderson et al. 2001; Hosoda, Stone-Romero, and Coats 2003; Judge, Hurst, and Simon 2009; Frevert and Walker 2014; Ma, Xu, and Luo 2015), studies on the attractiveness halo in later stages of relationships are scarce (Ma-Kellams, Wang, and Cardiel 2017; McNulty, Neff, and Karney 2008). As a result, one cannot reliably estimate the extent to which the attractiveness halo will generalise from VCs' selection-decisions to the early funding stages. It has been suggested that the attractiveness halo may weaken or disappear as the VC-entrepreneur relationship develops, other VCs get involved, and more individuating information comes available that would enable System 2-based processing (Hosoda, Stone-Romero, and Coats 2003; McNulty, Neff, and Karney 2008). On the other, there are good reasons to expect the attractiveness halo effect to persist beyond the formative stage of the VC-entrepreneur relationship, because new profound uncertainties may arise, information asymmetries persist, and VCs spend their time on many different activities simultaneously (Zider 1998).

The concept of co-ethnicity was used to capture potential similarity effects in staging. As VC investments have increasingly internationalised over the past decades (Megginson 2004; Nahata, Hazarika, and Tandon 2014; Atomico 2018), VCs more and more find themselves investing in ventures led by entrepreneurs with ethnic backgrounds different from themselves. Ethnicity acts as a powerful and lasting source of divide among people in modern societies and alters the relational dynamics between actors (McPherson, Smith-Lovin, and Cook 2001). As such, ethnicity is a potentially salient source of similarity that resonates with deeply ingrained, individually held core self-concepts that may directly affect VCs' staging decisions.

Moreover, recently the attractiveness halo effect has been found to depend on whether or not individuals share ethnic backgrounds (Agthe et al. 2016; Agthe and Maner 2017), suggesting indirect effects of ethnicity as well. But these findings cannot automatically be translated to a staged funding process, as the underlying explanations for this effect may not apply. This makes it unclear to what extent the attractiveness halo is sensitive to similarity-based heuristics as a function of subconscious, ethnicity-driven in-group out-group dynamics (Maner et al. 2005). Combined, an inquiry into the extent to which attractiveness and co-ethnicity jointly inform VCs' staging decisions is both topical and timely.

This study draws conclusions from a sample of 231 European IT-ventures. The dataset combines unique and detailed information about venture entrepreneurs, associated investors, and their early staging decisions. The first result of this study is that entrepreneurs' attractiveness significantly affects VCs' staging intensity, suggesting that entrepreneurs' attractiveness acts as a subconscious heuristic attribute that influences VCs' rational, System 2-based agency considerations. The results further demonstrate that the ethnic constellation of a given VC-entrepreneur dyad directly as well as indirectly affects VCs' staging decisions. When combined, the results suggest we should view VCs' staging decisions not merely as rational, agency-driven balancing acts, but as a decision-making context in which a dual-process model applies (Oreg and Bayazit 2009).

2. Theory

2.1. *Venture capital, stage financing, and heuristics*

The dominant view on new venture financing is that VCs' staging decisions are driven by rational, cost-driven considerations. VCs have been described as 'professional investors funding portfolios of potentially high-growth ventures' (Drover et al. 2017, 1827). VCs raise funds to set up portfolios of high-growth, high-risk ventures, and engage in their mentoring and monitoring (Sahlman 1990; Hellmann and Puri 2002). Ultimately, VCs seek to exit ventures and create favourable returns. In pursuing these favourable returns, VCs face substantial information asymmetry and uncertainty (Gompers 1995; Sahlman 1990; Gompers and Lerner 2001). Early-stage ventures have little to no performance history, operate in unpredictable and competitive environments, and typically face many years of negative earnings (Li 2008; Wang and Zhou 2004). As a result, most VCs opt for stage financing, whereby a venture's funding takes place gradually and VCs have the possibility to intensify their staging as they see fit. Staging has been recognised as 'the most important mechanism for controlling the venture' (Sahlman 1990, 506).

In so doing, VCs are confronted with a separation of ownership and control. Agency theory dictates that the separation of ownership and control brings about agency costs for the principal (*i.e.*, the VC), which call for mechanisms that enable the principal to control harmful costs induced by the agent (*i.e.*, the entrepreneur). For instance, entrepreneurs may be tempted to invest excessively in research and development (R&D) or may rush a product to market in spite of apparent risks (Gompers and Lerner 2001; Tian 2011). VCs therefore seek to alleviate any information asymmetries and agency costs as much as possible, so that the venture receives the financing that matches its potential. Staging is seen as a potent way to mitigate expected agency problems by keeping entrepreneurs ‘on a tight leash’ (Gompers and Lerner 2001, 155).

Notwithstanding its benefits, staging is not without costs. Staging is a timely endeavour, as VCs need to sit in board meetings, visit venture sites, and discuss day-to-day operations to monitor and improve venture performance (Sahlman 1990; Kaplan and Strömberg 2003; Bottazzi, Da Rin, and Hellmann 2008). Moreover, each staging round calls for additional negotiation and contracting efforts, and requires VCs to spend time and resources to discern a venture’s performance, progress, and prospects (Kaplan and Strömberg 2003). Also, staging may entice an entrepreneur to portray the venture’s progress too optimistically, or may focus on short-term success at the expense of long-term value creation (Tian 2011). And not in the least, staging can lead to delays in venture development through underinvestment in the initial development stage (Wang and Zhou 2004). The above implies that VCs need to weigh the costs of staging against expected agency hazards. Accordingly, VCs assumedly seek to identify the most efficient staging approach to align their interests with those of the entrepreneur. Indeed, prior research has indicated that higher expected agency costs lead to a more intensified staging process, expressed for instance through shorter time intervals between successive financing rounds (Tian 2011; Gompers 1995; Li 2008). In such cases, the increased staging intensity serves to discipline the entrepreneur and increase a VC’s control. In situations of low expected agency costs, staging intensity has been found lower, expressed through longer time intervals between financing rounds. In these situations, VCs prefer longer time intervals because it may keep the entrepreneur from ‘window-dressing’ while allowing the venture to attain economies of scale and enter the market more effectively (Tian 2011).

In all, VCs’ staging considerations are portrayed as cost-driven, rational decision-making processes in which System-2 based cognitive processes prevail. While the agency-perspective on stage financing is informative on how to interpret VCs’ staging approaches, it doesn’t cover the potentially underlying intuitive, System 1-based nature of the decision-making process that leads to VCs’ preferred staging intensity. As a consequence, the causes that are currently understood to shape VCs’ staging approach – namely their System-2 based cost considerations – are likely to portray an incomplete picture of how such decisions come about. As each staging round introduces new uncertainties and risks, and inherently involves probabilistic decision-making, heuristics are likely involved (Tversky and Kahneman 1974). Heuristic decision-making involves the use of simplifying shortcuts when confronted with complex issues, ‘freeing people from making a complete and systematic processing of information’ (Zhang and Cueto 2017, 437). The essence of heuristic decision-making, is that when confronted with a difficult question (*e.g.*, ‘should I continue the investment?’), people are subconsciously

inclined to *substitute* this by a more simple one (e.g., ‘do I trust this guy?’). The former question is difficult to answer because of the inherent information asymmetry and the many unknowns a decision-maker is confronted with. The latter is easy to answer because trust is typically inferred from physical appearance, which is readily available to the decision-maker (Langlois et al. 2000). The dominance of heuristics over rational thinking is strengthened as the decision task becomes more complex and sunk costs have been incurred (Tversky and Kahneman 1986; Arkes and Blumer 1985). Heuristic decision-making is likely to occur in entrepreneurial settings because key decisions are made under substantial time-pressure, high uncertainty, and severe information discrepancies (Baron 2004; Busenitz and Barney 1997). As a consequence, heuristic decision-making is practically unavoidable.

As VCs weigh their stakes in the face of substantial liabilities, and given that the decision to (continue to) invest is a probabilistic one, the potential for heuristic decision-making in the early staging phases is vast. Probabilistic decision-making in the context of uncertainty may cause the VC to subconsciously engage in heuristic thinking (driven by System 1) that informs his/her more calculative decision-making process (System 2). In what follows, entrepreneurs’ attractiveness (Section 2.2) and ethnicity (Section 2.3) are hypothesised to act as heuristic cues that could inform VCs’ agency considerations and preferred staging intensity.

2.2. The attractiveness halo and VCs’ staging decisions

Simply put, attractiveness can be defined as ‘beauty or ugliness identified through facial features’ (Frevert and Walker 2014, 313). Scientific evidence suggests that an individual’s attractiveness substantially influences how this person is being perceived and treated (Langlois et al. 2000; Zebrowitz and Montepare 2008). The attractiveness halo effect occurs across lifespans, sex, cultures, and ethnicities. With respect to lifespan, research has shown that children as young as four already demonstrate a systematic preference for information from attractive informants and make subconscious trustworthiness decisions based on facial attractiveness (Ma, Xu, and Luo 2016). Attractiveness ratings are also fairly consistent during childhood and through adulthood (Adams 1977). With respect to sex, studies of job-related outcomes showed the importance of attractiveness for both men and women (Hosoda, Stone-Romero, and Coats 2003; Rhodes 2006), but have also found sex-related differences for the association between attractiveness and perceptions of intellectual competence and employability (Jackson, Hunter, and Hodge 1995; Ruffle and Shtudiner 2015). When it comes to culture and ethnicity, previous studies have established high reliabilities of attractiveness ratings across ethnically and culturally different raters (Langlois et al. 2000; Little, Jones, and DeBruine 2011). In all, people with more attractive appearances are evaluated more positively on a range of traits, including outgoingness, social competence, intelligence, trustworthiness, and health (Zebrowitz and Rhodes 2004).

Two groupings of theories exist to explain the attractiveness halo, adhering either to the ‘beauty is good’ or ‘ugly is bad’ perspective. First, socialisation and social expectancy theories emphasise social stereotypes to explain why attractive people receive more positive treatments, known as the ‘beauty is good’ stereotype (Eagly et al. 1991). These theories maintain that facial appearance elicits differential social expectations in terms of

behaviour and traits for attractive and unattractive individuals, leading the perceiver to differential judgements and treatments of these individuals. These differential judgements and treatments ultimately get internalised by these individuals, leading to differential behaviours (Langlois et al. 2000; Goldman and Lewis 1977). In line with the ‘beauty is good’ perspective, fitness-related evolutionary theories regard attractiveness as a good indicator of health, fitness, and reproductive value, among other qualities, and therefore serves as an adaptive function that informs biological and social behaviours (Zebrowitz-McArthur and Baron 1983). From this perspective, people are considered sensitive to attractive faces because of the associated cues for underlying positive qualities.

The ‘ugly is bad’ perspective is particularly prevalent in ecological approaches to the attractiveness halo (Gibson 1979), culminating in the *overgeneralisation thesis* (Zebrowitz and Montepare 2008). In short, as facial appearance has prepared us to recognise underlying individual characteristics pertaining to low fitness and low mate quality, we tend to overgeneralise such responses to individuals whose facial appearance resembles those who are unfit. As a result, unattractive faces are perceived more negatively than average or attractive ones, because of their subconsciously assumed similarity to unfit or unhealthy individuals. These generalisations extend to perceptions of trust, competence and other individual-level attributes (Zebrowitz and Montepare 2008). Notwithstanding the different views on the mechanisms underlying the attractiveness halo, aforementioned perspectives share the standpoint that attractive individuals generally have a substantial advantage in interpersonal encounters. Physical appearance is usually one of the first things people learn about the other, and serves as a heuristic attribute that shapes someone’s attitude towards that person. In this phase of the relationship, physical appearance compensates for a lack of individuating information, and gives way to attractiveness stereotypes (Baron, Markman, and Bollinger 2006).

While the role of attractiveness in relationship formation is well-established, its role during subsequent relationship development remains an open question. Nonetheless, some studies have concluded that attractiveness effects persist beyond the formative relationship stage. In the context of marital relations, attractiveness brings about relational repercussions in terms of marriage satisfaction and duration (McNulty, Neff, and Karney 2008; Ma-Kellams, Wang, and Cardiel 2017). Focusing on the appearance-income relationship, Judge, Hurst, and Simon (2009) found attractiveness to have longitudinal indirect effects on both personal income and financial strains. To explain these lasting effects of attractiveness, scholars have emphasised the role of attractiveness in personal development. Attractive individuals tend to be viewed more positively by others, resulting in the development of personal characteristics through a process referred to as expectancy confirmation (Langlois 1986). Attractiveness stereotypes persistently produce differential treatments and judgements, which become embodied and bring about differential behaviours, traits, and self-views (Langlois et al. 2000). As Judge *et al.* asserted, ‘people who are attractive do think more highly of their worth and capabilities’ (Judge, Hurst, and Simon 2009, 749). These differential behaviours, traits, and self-views are said to positively and lastingly benefit attractive people in relational encounters (McNulty, Neff, and Karney 2008).

Considering the above, the attractiveness halo is expected to serve as a heuristic cue for VCs who seek to determine their staging approach, and likely benefits the attractive entrepreneur. First, more attractive people are judged more positively on various

qualities relevant to VC decision-making, including intellectual capability (Jackson, Hunter, and Hodge 1995; Hosoda, Stone-Romero, and Coats 2003), trustworthiness (Todorov, Pakrashi, and Oosterhof 2009), and status (Anderson et al. 2001). These qualities, and especially trustworthiness, likely mitigate VCs' risk assessment and perception of expected agency hazards. In accordance with dual process theory, the easily available cues that stem from an entrepreneur's physical appearance engender a halo-effect that will subconsciously influence VCs' analytical and calculative information processing. Second, as a VC needs to negotiate the specific terms of each additional staging round with the entrepreneur, the communication skills of attractive entrepreneurs may play a considerable role as well. Previous research has found more attractive individuals to be more confident and socially competent (Langlois et al. 2000), which benefits the attractive entrepreneur when convincing the VC to continue the investment in spite of agency hazards. Also, attractive people tend to be more extraverted, which has been associated with perceived leadership qualities (Bono and Judge 2004). Here, the differential treatments that have been internalised over time are expected to benefit the attractive entrepreneur. Third and final, VCs' reliance on heuristics may be reinforced because they operate in industries characterised by substantial asset intangibility, high market-to-book ratios, and intensified R&D activities. Under these conditions, VCs face severe potential agency issues and information asymmetries (Gompers 1995) and bet on the person more so than on the business case (Franke et al. 2006; Kaplan, Sensoy, and Strömberg 2009). Moreover, VCs tend to be involved in numerous simultaneous investments (Zider 1998), which may create information overload and could increase their susceptibility to System 1-based cognitions (Kahneman 2011). The above implies a *lower* staging intensity for ventures led by attractive entrepreneurs, as indicated by *longer* time intervals between successive capital disbursements.

Hypothesis 1: *An entrepreneur's attractiveness is positively associated with the time interval between successive investment rounds in the early stages of the funding process.*

2.3. The joint effect of ethnicity and attractiveness on VCs' staging decisions

Scholars have found the characteristics of a given entrepreneur to interact with those of a given investor (Franke et al. 2006; Matusik, George, and Heeley 2008; Murnieks et al. 2011), suggesting that similarity functions as a heuristic substitute in VC decision-making. The present study focuses on the role of ethnicity as a source of similarity and comparability. The concept of ethnicity generally appeals to a sense of belonging based on commonly perceived origins, culture, language and values (Brown and Langer 2010). Previous research found that people prefer to conduct business with people of the same ethnic origin (Bengtsson and Hsu 2015, 2010). To illustrate, Saxenian (2006) observed the existence of well over thirty professional networking associations centred around immigrant entrepreneurs and professionals in Silicon Valley. Saxenian's observation is a striking illustration of the more general principle of network homophily, which holds

that ‘similarity breeds connection’ (McPherson, Smith-Lovin, and Cook 2001, 415). Indeed, ethnicity has been found relevant across a range of settings and relationship types, including confiding relations (Marsden 1987), work relationships (Ibarra 1995), and marital bonds (Kalmijn 1998). These and other findings are illustrative of people’s strong inclinations to confer with similar others, and sit well with the similarity-attraction paradigm (Byrne 1971). Similarity captures the extent to which there is symmetry between persons’ actual or perceived characteristics, which can be of a sociodemographic, behavioural, or intrapersonal nature. The similarity attraction paradigm predicts that decision-makers will have more favourable attitudes towards people whom they perceive to be similar to themselves (McPherson, Smith-Lovin, and Cook 2001; Byrne 1971).

An important way in which co-ethnicity has been suggested to influence VCs’ decision-making is through enhanced trust. Interpersonal trust is essential to maintain a relationship and create a foundation for problem solving and cooperation (Hardin 2002). Ethnic differences among economic agents have been suggested to negatively impact mutual trust, limiting the number of economic exchanges among them (Bengtsson and Hsu 2010; Guiso, Sapienza, and Zingales 2009). To illustrate, Fisman (2003) found that firms were twice as likely to attain funding when dealing with a co-ethnic capital provider compared to a cross-ethnic investor. In a study of ‘ethnic entrepreneurs’, Bengtsson and Hsu (2015) found that shared ethnicity between the entrepreneur and VC increased the likelihood of investment by one-fifth, and also led to more commitment from the VC. As such, shared ethnicity may invoke a situation of cognitive ease (Kahneman 2011), which mitigates VCs’ inclination to closely screen and monitor a venture investment (Bengtsson and Hsu 2010) and decreases perceived uncertainty and risk. In the absence of shared ethnicity, however, potential agency issues are likely amplified. Reduced similarity and comparability may result in cognitive strain on the side of the VC. The VC will associate increased levels of uncertainty and risk with the venture (Kahneman 2011), which triggers System 2 and causes the VC to approach the venture more critically and apprehensively.

Hypothesis 2: *Co-ethnicity is positively associated with the time interval between successive investment rounds in the early stages of the funding process.*

Hypothesis 2 considers how co-ethnicity may act as a heuristic cue that subconsciously influences VCs’ staging decisions. Recent academic findings suggest that co-ethnicity may additionally represent a relational contingency that determines how the attractiveness halo takes effect. While people from different ethnic and cultural backgrounds are consistent in their attractiveness-evaluations of others (Coetsee et al. 2014; Rhodes 2006; Rhodes et al. 2001; Zebrowitz, Montepare, and Lee 1993), their subconscious responses to the attractiveness of others are not. Set in the context of job-applicant screening, studies of attractiveness-based evaluations of same-sex and opposite-sex targets found that attractiveness-based biases were consistent across different ethnic samples, but also found these biases to be significantly stronger ‘when one is evaluating a member of

one's own ethnicity than when one is evaluating a member of a different ethnicity' (Agthe et al. 2016, 9). Subjects showed less-positive responses towards attractive same-sex persons when evaluating a co-ethnic person as a potential job-candidate, supposedly because these attractive same-sex individuals are perceived as more threatening. Attractiveness-based halo-effects didn't extend in the same manner to evaluations of targets with ethnicities other than the rater's own ethnicity, implying that 'reduced similarity and comparability might have lessened the perceived threat to one's relationships and self-esteem' (Agthe et al. (2016), 9; see also Eastwick et al. (2009) and McClintock (2010)). These studies reason from an evolutionary perspective in which mating-related social evaluation biases deeply rely on individuals' core evaluations of the self (Oreg and Bayazit 2009). Following this rationale, attractive co-ethnic entrepreneurs may subconsciously represent more of a threat to VCs' deeply ingrained core self-concepts, which subsequently invoke feelings of dislike that compete with positive associations of trustworthiness and competence. These attractiveness-invoked feelings of dislike and threat are less likely to play a role when a VC is confronted with an attractive cross-ethnic entrepreneur, because of reduced perceived similarity and comparability. When attractiveness generates feelings of dislike, attractiveness essentially becomes a cue that signals threat rather than quality, and may mitigate positive attractiveness associations. As a result, the hypothesised mitigating effect of the attractiveness halo (see Hypothesis 1) weakens or disappears. Subsequently, the generally positive effect of attractiveness on the time interval between successive capital disbursements is anticipated to be weaker for co-ethnic dyads when compared to cross-ethnic dyads. This leads to the following hypothesis:

Hypothesis 3a: *For co-ethnic dyads, the effect of physical attractiveness on the time interval between successive funding rounds is weaker compared to cross-ethnic dyads.*

It cannot automatically be assumed, however, that the proposed mechanism for Hypothesis 3a applies to the context of VC-entrepreneur interactions. While attractiveness incited feelings of threat in co-ethnic relations can be powerful and automatic, and have been convincingly demonstrated in the context of job-applicant screenings, they may not take effect because of the different social positions that VCs and entrepreneurs tend to occupy (Maner et al. 2007). This could mean that the mechanism central to Hypothesis 3a doesn't apply. Instead, the absence of shared ethnicity could engender a situation of cognitive strain that will increase a VCs' caution towards the venture, invoke System-2 level thinking, and make the VC in question less susceptible to the attractiveness halo (Kahneman 2011). By contrast, sharing ethnic backgrounds may make the VC feel more at ease and less cautious, which could increase his/her susceptibility for the attractiveness halo. This suggests that the positive effect of attractiveness should be stronger in co-ethnic compared to cross-ethnic dyads. This line of reasoning would, contrary to Hypothesis 3a, suggest the following:

Hypothesis 3b: *For co-ethnic dyads, the effect of physical attractiveness on the time interval between successive funding rounds is stronger compared to cross-ethnic dyads.*

3. Methods

3.1. Research setting

This study was set in the European IT industry for a number of reasons. First, the European IT industry houses many new ventures with high-growth potential. Also, the European Union acts as a single market, paving the way for cross-border investments and entrepreneurial activities. As such, the European setting is suitable to uncover the role of co-ethnicity in stage financing. This is furthermore underscored by the increasing interest of non-European investors (especially US-based and Asian VCs) to invest in European ventures (Atomico 2018). Second, the IT industry is associated with substantial asset intangibility and high market-to-book ratios. In such settings, VCs are likely to experience agency-driven concerns when making investment decisions (Gompers 1995). Third, nowadays the European VC industry is well-represented with thirteen European countries in the top-20 of countries with the highest VC investment relative to gross domestic products (GDP) (OECD 2013).

3.2. Sampling and data collection

3.2.1. Sampling strategy

Ventures were sampled through the AngelList and Crunchbase platforms in the first half of 2017. Both platforms publish news about the IT industry and track ventures' development in terms of funding, team composition, and associated investors. Sampled ventures were located in cities such as Amsterdam, Barcelona, Berlin, London, and Paris. A number of criteria had to be met for a venture to be sampled. First, a venture's profile on these databases had to be complete. Ventures were only sampled if their profiles contained data about team composition, funding, and associated investors. Second, ventures had to have profiles on both AngelList and Crunchbase to enable the cross-validation of data. Also, ventures had to have LinkedIn profiles (both for the company itself and associated entrepreneurs/investors) and corporate websites to facilitate data reliability as well as the collection of additional information (see next paragraphs). The initial sampling approach resulted in 609 new IT ventures, which represent all ventures on AngelList and Crunchbase that met the sampling criteria. The representativeness of the sample was verified in two ways. First, the distribution of sampled ventures across European cities was compared to the distribution of funded ventures per city for the entire European population (Atomico 2018). Second, the distribution of the capital disbursement amounts for the sampled ventures were compared to that of the European population of ventures (*ibid.*). The sample proved representative on both accounts.

In view of the dependent variable of this study – *i.e.*, time interval between investment rounds – and the empirical focus on the early stages of the funding, the next step involved reducing the initial sample of 609 ventures to those that had received at least three rounds

of financing.¹ In total, 231 ventures² met the criterion of three or more capital disbursements. The involvement of the lead VC in each financing round was ascertained.

3.2.2. Data collection

Two researchers hand-collected data about the ventures, and all data-entries were cross-checked. The approach to hand-collect data allows to address questions that cannot be pursued using commercial databases (Hellmann and Puri 2002; Hsu 2004; Bottazzi, Da Rin, and Hellmann 2008).

The first step was to collect data about the ventures. AngelList and Crunchbase were consulted to gain insight in venture funding. Detailed data were collected about the number of financing rounds, the financing dates, and the amounts of financing secured by the ventures. Also, data were collected about the number of entrepreneurs and investors associated with each venture, which included listing their names. Furthermore, data were collected with respect to ventures' office locations. These data were cross-verified using corporate websites, VC websites, and LinkedIn. LinkedIn and corporate websites were additionally used to establish the number of employees for each venture at the time of data collection.

The second step was to collect data about the individuals associated with the 609 ventures. In total, 1,486 entrepreneurs and 2,578 investors were associated with the sampled IT ventures. Demographic data about each individual were collected through LinkedIn. Each individual's name was entered in the LinkedIn database to retrieve information about educational background, gender, and professional experience. This step also involved identifying the lead entrepreneur and -investor for each venture in order to determine the venture-specific VC-entrepreneur dyads that would serve as main units of analysis. In case more than one entrepreneur was associated with a venture, the entrepreneur who used the phrases 'CEO' and 'founder' on LinkedIn was considered the lead entrepreneur. Founder-CEOs are key figures and typically have substantial ownership power. The lead investor was determined by selecting the most experienced investor associated with a given venture and who had been involved with the venture since the first financing round.

The third step in data collection served to estimate entrepreneurs' physical attractiveness. Since this study focused on the physiognomic qualities of attractiveness, still photos were used to rate entrepreneurs' attractiveness (Anderson et al. 2001). Humans have extraordinarily well-developed abilities to process and recognise information from faces, which is why human raters are commonly used to rate others' physical attractiveness (Little, Jones, and DeBruine 2011). For this study, ten raters (five female and five male graduate students, average age of 22.8 (SD = .74)) with various ethnic backgrounds were employed to obtain attractiveness ratings for each entrepreneur in the dataset. Ratings were based on

¹Limiting the sample to ventures with at least three rounds of financing served two purposes. First, it ensured that for each venture at least two staging durations could be considered to calculate the staging intensity of the VC. Second, excluding ventures that received only one or two rounds of financing ascertained that VCs had ample opportunity for System-2 based reasoning. A focus on ventures with at least three rounds of financing can thus be considered a more stringent test of this study's theoretical claims.

²In view of any systematic differences between the subsample of 231 ventures and the 378 ventures that were excluded from analyses, additional t-tests were conducted. The analysis included variables that characterise the entrepreneurs/ventures and their relationship to the investors (excluding categorical variables and those that didn't pass Levene's test). Specifically, t-tests were carried out for firm age, team size, entrepreneurial experience, self-esteem, VC experience, educational diversity, geographic distance, and physical attractiveness. No significant differences were found at $p < .05$.

entrepreneurs' LinkedIn profile photos. Each rater received the full list of entrepreneurs in randomised order to mitigate the risk of systematic sequential bias (Kondo, Takahashi, and Watanabe 2012). As the raters needed to rate a substantial amount of profile pictures, raters were instructed to work no more than one hour a day on the task to ensure optimal concentration, and to spend no more than ten seconds per profile picture. The raters were monitored to ascertain their adherence to these instructions.

Step four served to establish entrepreneurs' and investors' ethnicity, using their surnames to infer ethnic origin. In line with earlier studies (e.g., Hegde and Tumlinson 2014; Bengtsson and Hsu 2015)³, multiple ethnic categories were specified: (1) Anglo-Saxon (e.g., U.K., U.S.A.), (2) West European (Belgium, The Netherlands, Germany), (3) South European (France, Spain, Italy, Greece), (4) East European (e.g., Baltic states, Russia), (5) North European (Scandinavian countries), (6) Indian/Pakistani, (7) Chinese/Korean/Japanese, (8) Jewish⁴, (9) Middle-Eastern/Arab, and (10) African. Next, Wikipedia.org was consulted to compile lists of surnames common to the specified ethnic categories. These surnames were used as benchmark to determine the ethnic origins of entrepreneurs and investors. The practice of inferring ethnic origin from surnames has been applied and validated in several studies (e.g., Webber 2007; Kerr 2008; Bengtsson and Hsu 2015), although limitations exist.⁵ Entrepreneurs' and investors' front names were used to prevent the erroneous assignments of ethnicity based on surnames that are common in more than one ethnic group.⁶ To further validate the ethnicity measure, 150 individuals from the sample population were contacted by telephone to verify their ethnic origin. 73 individuals were found available to participate in a brief interview, of whom 72 indicated the same ethnic category as the one inferred through the surname-procedure. Only one individual indicated a different ethnicity compared to the one inferred from his surname. Of the 72 individuals, 2 indicated an association with more than one ethnic category.

3.3. Measures

3.3.1. Dependent and independent variables

To capture VC investors' early-stage funding behaviour, this study relied on the *average time interval* between investment rounds one, two, and three. For each venture, the dates of the reported financing rounds were collected through AngelList and Crunchbase. Using these dates, the average duration between investment rounds was calculated in days. The

³While the operationalisation of ethnicity mimics earlier studies, the research setting played a role as well. For instance, because of the European IT setting, the categories are quite precise in terms of European ethnicities. In contrast, because there proved to be only four individuals in the entire dataset with a typical African surname, a single category for African ethnicities sufficed.

⁴As Bengtsson and Hsu (2015, 343) asserted, 'it is formally incorrect to label Jewish people as members of an ethnic group.' Nonetheless, this study follows both Bengtsson and Hsu (2015) and Hegde and Tumlinson (2014) in classifying Jewish people as a separate group because of their large presence among sampled VCs and entrepreneurs.

⁵For instance, this approach cannot prevent the underestimation of ethnic groups 'whose individuals assume names common among other ethnic groups' (Hegde and Tumlinson 2014, 2362). Such limitations may, however, create a bias against finding significant results (Bengtsson and Hsu 2015; Hegde and Tumlinson 2014; Kerr 2008).

⁶For instance, the surname 'Lee' can denote both an Anglo-Saxon and Asian ethnic origin. However, an individual called 'Keith Lee' is more likely of Anglo-Saxon origin.

average time intervals between investment rounds indicate a VCs' staging intensity, and serves as proxy for VCs' agency-driven investment considerations (Tian 2011; Li 2008).

To establish entrepreneurs' *attractiveness*, each rater reviewed all profile photos of the sampled entrepreneurs by answering the question 'How attractive is the entrepreneur?' A 7-point Likert scale was used to measure attractiveness, ranging from 1 (very unattractive) to 7 (very attractive). Raters agreed considerably on entrepreneurs' attractiveness given the interrater reliability of 0.923 ($p < .001$).

The variable *co-ethnicity* was created by comparing the ethnic origin of the lead entrepreneur with that of the lead investor. In case of a matching ethnicity the variable takes the value of 1, and 0 otherwise (Bengtsson and Hsu 2015; Hegde and Tumlinson 2014).

3.3.2. Control variables

Control variables were employed to increase the reliability of the models and to limit omitted variable bias. A first group of controls captures venture-related characteristics. *Firm age* covers the venture's age at the first round of financing and was incorporated because older firms have longer track records, which possibly impacts VC risk assessment. *Average firm growth* was incorporated to capture differences in venture success based on employee growth since venture founding, and may indicate differences in venture quality and scalability. The average *amount of funding* across stages was incorporated to account for differences in perceived risk, as was the *number of VCs* involved in a venture, to control for syndication. A *B2B dummy* was included to capture ventures' business-to-business (B2B) or business-to-consumer (B2C) orientation (1 for B2B), for VCs' agency considerations can vary for B2B and B2C firms. Additionally, *sub-industry* controls were added to capture differences in ventures' market orientation.⁷ Finally, to capture differences in development stages and quality, a control for the total *number of rounds* that ventures had received capital was incorporated.

A second group of controls considers team-based and entrepreneurial differences. *Team size* specifies the number of entrepreneurs at venture birth, as team size may positively impact both team functioning (Mao et al. 2016) and VC valuation (Murnieks et al. 2011). *Team attractiveness* was included to capture the attractiveness of venture team members excluding the lead entrepreneur. *Entrepreneurial experience* was estimated by counting the days of entrepreneurial experience of ventures' entrepreneurial teams at the time of the first investment round. Investors' *VC experience* was calculated by counting the days of experience of the investors associated with a given venture at the time of investment. Both types of experience can affect VC decision-making processes (Hsu 2007). To capture additional venture team-specific differences, *educational diversity (level)* and *educational diversity (background)*⁸ were added as they impact external capital providers' willingness to grant capital (Vogel et al. 2014). *Lead entrepreneur gender* was

⁷While the sample consists of IT-firms only, there is quite some variety in terms of market orientation. To illustrate, some ventures provide IT-solutions for education while others are active in fintech. To capture differences in market orientation, ventures' LinkedIn profile descriptions were used to categorise ventures across the following NACE-categories: advertising; education; entertainment; financial activities; fitness and health; ICT; manufacturing; real estate activities; retail; professional services; transport; travel.

⁸Both types of educational diversity were calculated using Blau's index of variability (Blau 1977). For diversity in educational level, the following categories were used: PhD; Master's; Bachelor's; High-school. For diversity in educational background, entrepreneurs' study backgrounds were categorised as follows: Business & Economics; Engineering; Humanities & Arts; Law & Political Science; Science.

included by adding a dummy variable (1 for males) to control for potential gender biases (Balachandra et al. 2017). The study also controls for the lead-entrepreneur's *self-esteem*, because attractive individuals may develop differential behaviour patterns and self-views (Langlois et al. 2000; Meier et al. 2010). To this end, a second and different group of raters (three female and two male graduate students, average age of 22 (SD = .89)) were asked to rate entrepreneurs' self-esteem based on their physical appearance using LinkedIn profile photos. Previous studies have shown that raters can make accurate personality judgments based on people's physical appearance on impromptu, spontaneous photographs (Naumann et al. 2009). Self-esteem was measured using the SISE scale (Robins, Hendin, and Trzesniewski 2001). The order in which the raters viewed the profile photos was varied.

A third group of controls captures qualities of the VC-entrepreneur dyads. Both *educational similarity* and *gender similarity* were included to control for similarity effects other than ethnicity (Franke et al. 2006). The former would take a value of 1 if the educational backgrounds of both the VC and entrepreneur fell within the same category (e.g., Engineering). The latter would take the value of 1 if both the VC and entrepreneur had the same gender. *Geographic distance* (log) was included to capture the kilometric distance between the venture firm and the VC investor, based on the venture's and investor's countries of origin. Previous research has shown that geographic distance can affect VCs' expected agency hazards (Tian 2011).

Ventures' location differences were captured by incorporating a *location dummy* for differences in city GDP. This was done to control for differences between relatively large European cities (such as London) and relatively small ones (e.g., Vienna), thereby potentially capturing different competitive dynamics. As this study doesn't rely on the use of standardised profile pictures to estimate entrepreneurs' attractiveness, it was necessary to control for differences in photo quality. The initial group of ten raters were asked to indicate the extent to which they felt that the profile picture enabled a good judgment of the entrepreneur's attractiveness on a 5-point Likert scale. This resulted in a photo quality control for both the lead entrepreneur (*photo quality lead*) and team members (*photo quality team*). To conclude, *year dummies* were incorporated as the staging processes encompassed multiple years.

4. Results

4.1. Main results

Hypotheses were tested using ordinary least squares (OLS) regression models. Table 1 shows the means and standard deviations of the modeled variables. Correlations for the variables in this study are shown in Table 2. The average lead entrepreneur's attractiveness was 4.005 (SD = 0.976), which proved significantly higher than the mean attractiveness of the lead's fellow team members (mean = 3.657, SD = 0.947).⁹ The mean value for the ethnicity dummy was 0.476 (SD = 0.501). On average, ventures were 616 days (SD = 477) in operation when receiving their first round of capital. The logged average time

⁹By means of a t-test.

Table 1. Means and standard deviations.

Variable		Mean	SD
1.	Avg. time interval (log)	5.756	0.907
2.	Attractiveness lead	4.005	0.978
3.	Co-ethnicity	0.476	0.501
4.	Attractiveness team	3.657	0.947
5.	Firm age	616.42	476.914
6.	Team size	2.54	1.139
7.	Avg. firm growth	17.120	28.332
8.	B2B dummy	0.597	0.492
9.	Number of rounds	3.26	0.776
10.	Entrepreneurial experience	8.835	11.289
11.	Entrepreneur's self-esteem	4.048	1.231
12.	VC experience	19.668	25.921
13.	Number of VCs	5.81	5.593
14.	Educational diversity (level)	0.347	0.436
15.	Educational diversity (type)	0.415	0.446
16.	Educational similarity	0.684	0.466
17.	Lead entrepreneur gender	0.960	0.194
18.	Gender similarity	0.917	0.276
19.	Amount of funding (log)	15.435	1.202
20.	Location dummy	0.609	0.489
21.	Geographic distance	6.752	2.368
22.	Photo quality lead	4.415	0.533
23.	Photo quality team	4.351	0.542

interval between investment rounds was 5.756 (SD = 0.907). As Table 2 exhibits, attractiveness and co-ethnicity were not significantly correlated ($\beta = -.036$, $P = .591$).

Table 3 presents the results of the regression analysis for the time between investment rounds. The root variable of physical attractiveness was mean centred prior to creating the interaction term to prevent multicollinearity. Variance inflation factors (VIF) indicate low levels of multicollinearity, with the highest encountered VIF being 2.816. A Breusch-Pagan test showed no evidence of heteroskedasticity (coef. = 0.98; Prob. F = 0.5063). Model 1 is the baseline model, incorporating control variables only. Model 2 adds the main effect of physical attractiveness and serves to test hypotheses 1 and 2. Model 3 incorporates the interaction term to test hypotheses 3a and 3b.

Hypothesis 1 anticipates a positive relationship between the lead entrepreneur's physical attractiveness and the time between investment rounds. Model 2 shows that the attractiveness term is positive and significant ($\beta = .286$, $P < .01$). This result implies that VCs appear sensitive to the attractiveness halo and adjust their staging intensity accordingly.

Hypothesis 2 covers the direct effect of co-ethnicity on the dependent variable. Model 2 shows that the co-ethnicity term is positive and significant ($\beta = .239$, $P < .01$), suggesting longer time intervals for ventures with co-ethnic VC-entrepreneur dyads.¹⁰ *Hypotheses H3a* and *H3b* postulate a moderating effect of co-ethnicity on attractiveness and time between investment rounds, be it with different expectations. As shown in Model 3, the interaction term *Attractiveness x Co-ethnicity* has a significant, negative

¹⁰The effect sizes for the halo-effect and ethnicity reported in Table 3 can be considered small to medium (Cohen 1988). However, given the large stakes involved, and to the extent that the VC industry continues to internationalise, the effects are noteworthy nonetheless.

Table 2. Correlations.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1 Avg. time interval (log)	1																						
2 Attractiveness lead	0.144	1																					
3 Co-ethnicity	0.118	-0.036	1																				
4 Attractiveness team	-0.13	0.438	0.109	1																			
5 Firm age	0.239	-0.068	-0.089	-0.136	1																		
6 Team size	0.021	-0.052	0.044	-0.001	-0.046	1																	
7 Average firm growth	-0.049	-0.026	0.039	-0.014	0.12	0.069	1																
8 B2B dummy	0.106	-0.017	-0.244	-0.087	-0.011	-0.047	-0.12	1															
9 Number of rounds	-0.031	-0.085	-0.029	-0.085	0.15	0.097	0.56	-0.147	1														
10 Entrepreneurial experience	-0.014	-0.129	0.086	-0.147	0.037	0.225	0.063	-0.089	0.13	1													
11 Entrepreneur's self-esteem	0.115	0.53	0.003	0.26	-0.028	-0.022	0.02	0.014	0.027	-0.034	1												
12 VC experience	-0.095	-0.012	-0.075	-0.046	0.119	-0.025	0.073	-0.001	0.005	0.077	-0.032	1											
13 Number of VCs	-0.109	0.019	-0.054	-0.034	0.009	0.102	0.188	-0.06	0.301	0.028	0.054	0.543	1										
14 Educational diversity (level)	-0.023	0.123	-0.003	-0.017	0.035	0.097	-0.001	0.084	-0.058	-0.018	0.091	-0.041	-0.063	1									
15 Educational diversity (type)	0.124	0.049	-0.039	-0.064	0.077	0.209	-0.042	-0.026	-0.096	-0.06	0.091	0.006	0.071	0.11	1								
16 Educational similarity	-0.013	-0.081	0.033	-0.076	0.004	0.036	0.056	-0.186	0.048	0.044	-0.04	0.017	0.108	-0.013	0.174	1							
17 Lead entrepreneur gender	0.003	-0.122	0.014	-0.131	-0.058	0.076	0.05	-0.075	0.039	0.052	-0.129	-0.036	-0.059	-0.028	0.046	0.151	1						
18 Gender similarity	0.055	-0.086	0.034	-0.124	0.006	0.101	0.003	0.011	0.019	0.081	-0.076	0.051	-0.044	-0.043	0.121	0.135	0.672	1					
19 Amount of funding (log)	-0.029	-0.063	-0.041	-0.034	0.204	0.179	0.55	-0.124	0.481	0.21	-0.004	0.039	0.256	-0.05	-0.049	0.089	0.052	-0.011	1				
20 Location dummy	-0.091	0.107	0.072	0.184	-0.133	-0.012	-0.069	-0.006	0.028	-0.228	0.08	0.083	0.225	0.009	-0.224	-0.221	-0.116	-0.111	0.068	1			
21 Geographic distance	0.006	-0.112	-0.073	-0.119	0.137	-0.049	0.117	0	0.223	0.066	-0.042	0.225	0.335	-0.203	-0.106	-0.083	-0.086	-0.081	0.183	0.082	1		
22 Photo quality lead	0.051	-0.067	-0.002	0.017	0.014	0.115	-0.011	0.025	-0.063	-0.098	-0.01	-0.018	0.028	-0.03	-0.004	-0.023	0.009	0.036	0.05	0.142	-0.104	1	
23 Photo quality team	-0.007	0.023	0.041	0.166	0.067	0.057	-0.005	-0.007	-0.045	-0.064	0.024	-0.04	0.022	-0.001	0.07	-0.044	0.004	-0.023	-0.09	0.129	0.019	0.438	1

$N = 231$. Correlations of .130 or higher (positive or negative) are significant at $P < 0.05$.

interaction coefficient ($\beta = -.213$, $P < .05$), while attractiveness has a positive and significant association to the dependent variable ($\beta = .436$, $P < .001$).¹¹ This finding suggests that the effect of attractiveness on the dependent variable is stronger for VC-entrepreneur dyads characterised by cross-ethnicity, and weaker for those characterised by co-ethnicity. Figure 1 illustrates this interaction effect. Particularly, the slope for the effect of attractiveness on staging intensity is steeper for cross-ethnic dyads compared to co-ethnic dyads. This is consistent with the theoretical mechanism associated with Hypothesis 3a. At the same time, the results additionally suggest that co-ethnic entrepreneurs generally enjoy longer time intervals compared to cross-ethnic entrepreneurs.

Results were subjected to a two-stage least squares (2SLS) analysis to test for endogeneity (section 4.2), and Heckman selection models to check for sample selection bias (section 4.3).

4.2. Two-stage least squares analysis: instrument selection and results

The research design of this study doesn't satisfy the orthogonality assumption of OLS regression analysis, which holds that the error term e doesn't correlate with its regressors (Antonakis et al. 2014). In the context of the present inquiry, the regressor term x may correlate with e , which could mean it correlates with omitted causes (despite incorporated controls). As a result, one cannot rule out the possibility that investors' subconscious reliance on attractiveness as a heuristic cue may in fact be caused by variables not included in this study. Therefore, an instrument variable was incorporated to control for endogeneity and a 2SLS analysis was conducted.

Entrepreneurs' *pattern hair loss* (PHL) was selected as the instrument variable and therefore serves as the exogenous source of variance in this study. PHL is the most common type of hair loss that occurs after adolescence among both males and, to a lesser extent, females, and strongly correlates with physical attractiveness for both men and women (Muscarella and Cunningham 1996; Van der Donk et al. 1994; Williamson, Gonzalez, and Finlay 2001). The rationale behind this instrument partly relies on evolutionary interpretations of the social perception of hair loss, and partly on the psychosocial impact of PHL on individuals. Throughout history, scalpel hair has been an important aspect of self-identity (Gao, Maurer, and Mirmirani 2018). Evolutionary speaking, pattern hair loss is connected to physical and social maturation, and has been associated with 'non-threatening forms of dominance, wisdom, and nurturance' on one hand, and 'decreased perceptions of attractiveness and aggressiveness' on the other (Muscarella and Cunningham 1996, 99). While faces with receding hairlines have been shown to appear more intelligent, individuals with PHL have also been found less attractive and less masculine (Cash 1990; Wogalter and Hosie 1991; Gao, Maurer, and Mirmirani 2018; Capitán et al. 2017). The effect of PHL on male attractiveness was found to be consistent across both male and female raters (Cash, 1990; Muscarella & Cunningham, 1996).

¹¹Conditional effects of the focal predictor were estimated at different values of the moderator. The predicted slope for the cross-ethnicity condition was significant at $p = .0002$ ($p < .001$). The estimated slope for the co-ethnicity condition was significant at $p = .079$ ($p < .10$). In other words, in the co-ethnicity condition, the effect of physical attractiveness on time between investment rounds is weaker compared to the cross-ethnicity-condition (consistent with the steepness of both slopes in Figure 1).

Hair loss has psychosocial effects as well (Cash 2009; Alfonso et al. 2005). Individuals with visibly receding hairlines tend to be more self-conscious and dissatisfied with their appearance (Girman et al. 1998; Budd et al. 2000). As such, PHL may cause negative self-image and, ultimately, lower self-esteem and self-confidence. This effect applies to both men and women (Van der Donk et al. 1994; Williamson, Gonzalez, and Finlay 2001), and occurs especially among individuals with PHL in the age-category of 18 to 40 years (Budd et al. 2000; Alfonso et al. 2005). It was estimated that 50 to 73.5 percent of the lead-entrepreneurs sampled for this study fall within this age category.¹² People with high self-esteem and self-confidence are typically viewed as more attractive (Langlois et al. 2000).

Taking the evolutionary interpretations and psychosocial consequences of PHL into account, pattern hair loss may indirectly influence VC decision-making *through* attractiveness. As such, the selected instrument satisfies the relevance requirement, which holds that there should be a theoretical association between the instrument and the independent variable. It is also reasonable to assume that an individual's pattern hair loss doesn't directly impact VC decision-making, but instead casts its effect through other variables, such as attractiveness. This implies that the instrument satisfies the exclusion restriction.¹³ This makes PHL an appropriate instrument, especially because genetically determined qualities (such as testosterone level, which is strongly associated with PHL) tend to be suitable instruments (Antonakis et al. 2014).

Entrepreneurs' PHL was estimated by means of their LinkedIn profile photos using the universal BASP classification system developed by Lee et al. (2007). The BASP classification system specifies gradually developing patterns of (fe)male hair loss. As entrepreneurs' LinkedIn profile pictures involved frontal portraits, the L-type, M-types, C-types, U-types, and F-types PHL could be used to determine anterior hairline shapes and hair density (see Lee et al. 2007 for visualisations of PHL-types). V-types PHL could not be identified since these involve hair loss on the back of someone's head. Subsequently, a 6-point scale was developed to capture sampled lead-entrepreneurs' degree of hair loss: 1 = L; 2 = M0, C0, F1; 3 = M1, C1, F2; 4 = M2, C2, F3; 5 = M3, C3; 6 = U1, U2, U3.

Table 4, panel A, exhibits the first-stage regression results for *physical attractiveness*.

The instrument (PHL) acts as the main independent variable and all control variables of the original OLS regression were included. Panel A shows that the coefficient estimate for PHL is negatively and significantly associated with physical attractiveness ($\beta = -.344$, $p < .001$), suggesting that a) more PHL is associated with less attractiveness and b) the instrument is relevant. Panel B of Table 4 contains the second-stage regression results, with *time between investment rounds* as the dependent variable and the PHL instrument as one of the independent variables. The coefficients for the 2SLS regression (panel B) are generally consistent with the original estimates (Table 3). The magnitudes of the 2SLS coefficients for the independent variables suggest that the original OLS regression

¹²Data about entrepreneurs' length of professional experience at the time of seed funding were used to estimate the percentage of sampled entrepreneurs aged 40 or younger. When assuming that sampled entrepreneurs had started their professional careers by the age of 23, 73.5 percent were aged 40 or younger. When assuming that entrepreneurs had started their professional careers at the age of 25, 50 percent were aged 40 or younger.

¹³An additional analysis was carried out in which the instrument variable was regressed against the dependent variable, replacing physical attractiveness, and including all controls. The instrument variable wasn't found to directly affect the dependent variable ($\beta = -.123$, $p = .156$). Regression results are available upon request.

Table 3. Results of OLS regression for average time between investment rounds.

Variable	Model 1				Model 2				Model 3			
	B	S.E.	Beta	Sig.	B	S.E.	Beta	Sig.	B	S.E.	Beta	Sig.
Constant	4.560	1.571		**	3.846	1.540		*	2.857	1.598		†
Attractiveness team	−0.123	0.096	−0.112		−0.216	0.098	−0.197	*	−0.223	0.097	−0.202	*
Firm age at round 1	0.000	0.000	0.170	†	0.000	0.000	0.168	†	0.000	0.000	0.150	*
Team size	0.066	0.071	0.079		0.070	0.069	0.084		0.067	0.068	0.081	
Average firm growth	−0.001	0.004	−0.029		0.000	0.003	0.002		0.000	0.003	−0.011	
B2B dummy	0.424	0.175	0.219	*	0.454	0.170	0.235	**	0.480	0.169	0.248	**
Number of rounds	0.020	0.136	−0.018		0.017	0.132	−0.014		0.028	0.130	−0.025	
Entrepreneurial experience	0.000	0.010	−0.001		0.005	0.010	0.042		0.005	0.010	0.050	
Entrepreneur self-esteem	0.115	0.060	0.152	†	0.019	0.066	0.025		0.022	0.065	0.029	
VC experience	−0.004	0.004	−0.088		−0.005	0.004	−0.114		−0.005	0.004	−0.112	
Number of VCs	−0.012	0.017	−0.074		−0.013	0.017	−0.083		−0.013	0.017	−0.083	
Educational diversity (level)	−0.185	0.175	−0.082		−0.237	0.171	−0.105		−0.212	0.169	−0.094	
Educational diversity (type)	0.494	0.190	0.227	*	0.524	0.185	0.240	**	0.506	0.183	0.232	**
Educational similarity	−0.056	0.169	−0.027		−0.021	0.164	−0.010		−0.044	0.163	−0.021	
Lead entrepreneur gender	0.411	0.604	0.065		0.462	0.586	0.073		0.404	0.580	0.064	
Gender similarity	0.018	0.376	0.005		−0.006	0.364	−0.002		0.082	0.363	0.022	
Amount of funding	−0.015	0.084	−0.020		−0.017	0.081	−0.023		0.002	0.081	0.002	
Location dummy	−0.077	0.180	−0.040		−0.068	0.175	−0.035		−0.068	0.173	−0.035	
Geographic distance	0.016	0.037	0.038		0.026	0.036	0.062		0.021	0.036	0.050	
Photo quality lead	0.283	0.183	0.157		0.295	0.178	0.164	†	0.250	0.177	0.139	
Photo quality team	−0.265	0.212	−0.128		−0.267	0.205	−0.129		−0.212	0.204	−0.102	
Year dummies	−0.365	0.174	−0.191	*	−0.345	0.168	−0.180	*	−0.312	0.167	−0.163	†
Sub-industry dummies	Yes	Yes	Yes		Yes	Yes	Yes		Yes	Yes	Yes	
Attractiveness lead					.297	0.094	0.286	**	0.452	0.121	0.436	***
Co-ethnicity					.456	0.160	0.239	**	0.466	0.158	0.244	**
Attractiveness lead x Co-ethnicity									−0.315	0.154	−0.213	*
R ²			.284				.332				.352	
Adjusted R ²			.110				.163				.183	
F			1.632	*			1.970	**			2.078	**
N			231				231				231	

Two-tailed tests. Unstandardized (B) and standardised (Beta) coefficients are reported.

† $P < 0.10$; * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

estimates for *physical attractiveness* and *co-ethnicity* were slightly underestimated. Nonetheless, the general interpretation of the results remains unaffected.

As part of the 2SLS analysis, both a Durbin test and Wu-Hausman test were performed to examine the likelihood of endogeneity issues. The null hypothesis of both tests is that the considered variable (attractiveness) can be treated as exogenous. The results for the Durbin (.740, $p = .390$) and Wu-Hausman (.579, $p = .448$) tests were strongly insignificant, implying that the null of exogeneity cannot be rejected.¹⁴

4.3. Assessing sample selection bias

Many of the 609 new ventures failed to secure at least three rounds of financing, which was used as an inclusion criterion for the analysis. This could have introduced selection

¹⁴In addition to the 2SLS, a Coarsened Exact Matching (CEM) procedure was performed to further substantiate the inferential claims made in this study. The findings from this CEM procedure suggest that physical attractiveness is a credible independent variable. CEM results are available upon request.

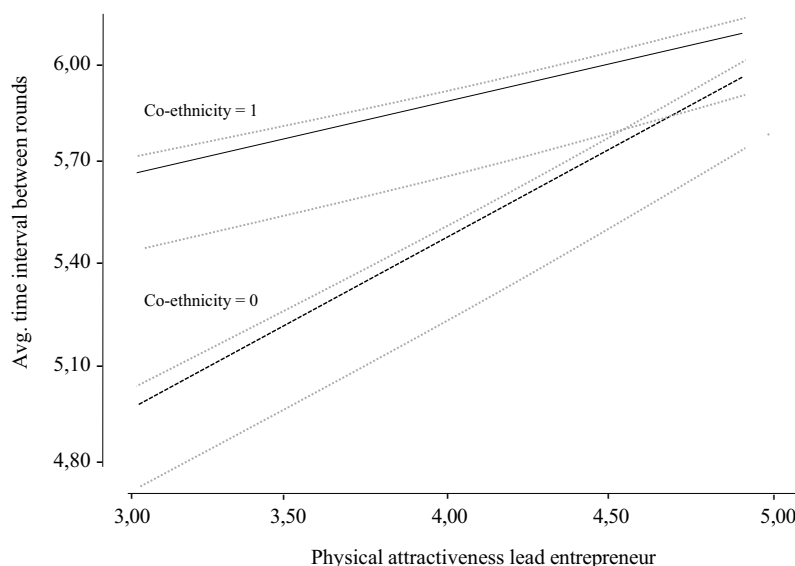


Figure 1. Moderating effect of ethnicity on the average time between investment rounds.

bias into the analysis that is similar to self-selection (Heckman 1979). New ventures that did not secure at least three rounds of financing may systematically differ, implying that the ventures sampled for analysis cannot be taken as random. Therefore, the Heckman selection model approach was used to assess sample selection bias.

Heckman selection models were constructed in two stages. The first stage involved developing a model to estimate the probability of survival for each specific case. To develop the survival model, average firm growth and average investment amount per round were used in the selection model (and are part of the OLS models that predict VCs' staging intensity). The underlying rationale is that firms with high growth rates and more VC backing have a higher probability of securing additional funding. In stage two, an estimation model was created that incorporated the predicted individual probabilities. As shown in Models 1 and 2 of Table 5, the results remained nearly identical in terms of magnitude, sign, and statistical significance when compared to the results in Table 3. The inverse Mills ratio is -0.3606 , suggesting a downward yet insignificant bias of estimates. Combined, these results indicate that any potential selection bias hasn't materially changed the original OLS estimates.

5. Discussion and conclusion

5.1. Findings and implications

The current study explored heuristic decision-making beyond VCs' initial selection decisions, and specifically centred on physical attractiveness and co-ethnicity as heuristic cues. In so doing, this study responded to Franke's et al. (2006) suggestion that the staging process could be a worthwhile context to study heuristics. This study is the first to

Table 4. Results of 2SLS analysis.

Panel A: First-stage regression for <i>physical attractiveness</i>			Panel B: Second-stage regression for <i>average time between investment rounds</i>		
Variable	Standardised Beta Coefficients		Variable	Standardised Beta Coefficients	
Constant	3.374	*	Constant	3.884	*
Pattern hair loss	−0.344	***	Attractiveness team	−0.334	*
Attractiveness team	0.249	**	Firm age at round 1	0.223	†
Firm age at round 1	0.001		Team size	0.082	
Team size	−0.057		Average firm growth	0.031	
Average firm growth	0.030		B2B dummy	0.216	*
B2B dummy	−0.079		Number of rounds	0.010	
Number of rounds	−0.073		Entrepreneurial experience	0.108	
Entrepreneurial experience	−0.092		Entrepreneur self-esteem	−0.260	
Entrepreneur self-esteem	0.385	***	VC experience	0.126	
VC experience	0.075		Number of VCs	−0.089	
Number of VCs	0.098		Educational diversity (level)	−0.141	†
Educational diversity (level)	0.092		Educational diversity (type)	0.238	**
Educational diversity (type)	−0.050		Educational similarity	0.019	
Educational similarity	−0.037		Lead entrepreneur gender	0.121	
Lead entrepreneur gender	−0.029		Gender similarity	0.012	
Gender similarity	0.037		Amount of funding	−0.070	
Amount of funding	−0.004		Location dummy	−0.041	
Location dummy	−0.066		Geographic distance	0.058	
Geographic distance	−0.025		Photo quality lead	0.248	*
Photo quality lead	−0.007		Photo quality team	−0.166	
Photo quality team	0.028		Year dummies	Yes	
Year dummies	Yes		Sub-industry dummies	Yes	
Sub-industry dummies	Yes		Co-ethnicity	0.256	**
Co-ethnicity	−0.078		Attractiveness lead	0.597	**
R ²	0.489		R ²	0.299	
N	231		N	231	

Two-tailed tests. Standardised coefficients are reported.

† $P < .01$; * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

examine attractiveness and ethnicity jointly in the context of early-phase stage financing, and one of few that centred on the attractiveness halo in later stages of (professional) relationships. As detailed above, gaining insight into the use of heuristics in staging is important, as it challenges the assumption that staging relies solely on rational, System 2-based agency-driven considerations. The results suggest that both attractiveness and ethnicity, independently and jointly, function as heuristic cues that inform VCs' staging considerations, and hint at an interplay between System 1 and System 2-based cognitions.

The current study adds to an emerging literature on VC investment structures on the level of entrepreneurial firms (e.g., Wang and Zhou 2004; Tian 2011). While literature on investment structures predominantly relied on agency-theory to explain VC decision-making, the current study demonstrates the promise of dual-process theory to better understand staging. It should be emphasised that dual-process theory is not at odds with agency perspectives on staging. Rather, it suggests that agency is not the only mechanism at play. It has been established that subconscious, intuitive System 1-based cognitions can infuse System 2-based thought processes (Kahneman 2011; Tversky and Kahneman 1974). While agency perspectives seem to do a solid job in capturing System-2 based VC considerations, they portrait only part of the picture. As such, the results of this study strongly suggest that dual-process theory should be considered in the context of staging to better understand their dynamics. This study made a first attempt, and in so doing

Table 5. Estimated coefficients from the Heckman selection model for average time between investment rounds.

Variable	Model 1			Model 2		
	<i>B</i>	<i>S.E.</i>	<i>Sig.</i>	<i>B</i>	<i>S.E.</i>	<i>Sig.</i>
Constant	4.369	1.775	*	5.178	1.993	**
Attractiveness team	−0.227	0.108	*	−0.223	0.095	*
Firm age at round 1	0.000	0.000		0.000	0.000	
Team size	0.061	0.070		0.073	0.062	
Average firm growth	−0.000	0.003		−0.000	0.003	
B2B dummy	0.413	0.176	*	0.390	0.155	*
Number of rounds	0.032	0.133		0.065	0.120	
Entrepreneurial experience	0.007	0.010		0.005	0.009	
Entrepreneur self-esteem	−0.128	0.116		−0.107	0.103	
VC experience	−0.005	0.004		−0.005	0.003	
Number of VCs	−0.012	0.017		−0.013	0.015	
Educational diversity (level)	−0.225	0.175		−0.279	0.158	
Educational diversity (type)	0.467	0.186	*	0.431	0.165	**
Educational similarity	−0.039	0.166		−0.039	0.145	
Lead entrepreneur gender	0.408	0.586		0.345	0.514	
Gender similarity	0.147	0.371		0.193	0.327	
Amount of funding	−0.030	0.084		−0.139	0.106	
Location dummy	−0.064	0.178		−0.106	0.158	
Geographic distance	0.019	0.037		0.015	0.032	
Photo quality lead	0.342	0.187		0.324	0.164	*
Photo quality team	−0.248	0.216		−0.227	0.190	
Year dummies	Yes			Yes		
Sub-industry dummies	Yes			Yes		
Co-ethnicity	0.430	0.165	*	0.444	0.145	**
Attractiveness lead	0.518	0.133	***	0.510	0.117	***
Attractiveness lead x Co-ethnicity	−0.325	0.164	*	−0.308	0.144	*
R ²	.343					
Adjusted R ²	.162					
F	1.890					
Observations	506			506		
Censored observations				231		
Uncensored observations				275		
Inverted Mills Ratio				−.361		
Wald chi2 (35)				87.97		

identified physical attractiveness and co-ethnicity as heuristic attributes that inform VCs' agency considerations.

Narrowing down to attractiveness literature, this study carries additional theoretical implications. First, most investigations into the attractiveness halo have centred on short-term interactions in the formative stage of relationships (Frevort and Walker 2014), and oftentimes included subjects who had no actual relationship with one another (Hosoda, Stone-Romero, and Coats 2003). As such, the current study represents a valuable addition to an already comprehensive body of literature by exploring the attractiveness halo in a later relationship stage and a naturalistic setting. This study not only confirms that attractiveness impacts individuals' evaluation of others in professional contexts, but also shows that attractiveness halo effects linger on during later stages of dyadic relationships (Anderson et al. 2001; Judge, Hurst, and Simon 2009; Ma-Kellams, Wang, and Cardiel 2017). Second, this study contributes to attractiveness literature by consolidating that the attractiveness halo is conditional on other aspects of a given evaluator-target dyad. In so doing, it corroborates the theoretical mechanism suggested by Agthe et al. (2016), which implies that the ethnic constellation of a dyad triggers VCs' core self-evaluations when

exposed to an entrepreneur's attractiveness. As a result, the ethnic constellation of a dyad determines how strongly attractiveness acts as a heuristic cue.

These theoretical insights have several practical implications. As debates on biased VC assessment have reached popular media (e.g., Bueschen 2015; The Economist 2020), awareness of the importance of more rational VC selection decisions appear widely present among entrepreneurs, VCs and policy makers. However, the public focus on heuristics during screening and selection may have diverted attention from stage financing. From an entrepreneurial perspective, the results suggest that entrepreneurs' attempts to benefit from VCs' susceptibility to heuristics may prove fruitful during the early funding stages as well. Entrepreneurs may particularly consider how to benefit from the attractiveness halo during staging negotiations when confronted with cross-ethnic VC counterparts. From an investor-perspective, results suggest that VCs cannot lower their guard when entering the staging phase. To the extent that VCs attempt to debias their selection decisions, these attempts may need to be transferred to the funding stage as well. For policy-makers, results suggest that any existing policies aimed at mitigating the role of heuristics in VCs' selection decisions may be made undone during the subsequent funding stage. Accordingly, policy-makers should consider their position towards heuristic decision-making during the early funding stages in view of any undesirable societal effects.

5.2. Limitations and future research opportunities

The chosen research design implies certain constraints. First, VC decision-making is subject to unobserved factors (Fox *et al.*, 2014). Results should be viewed in light of this limitation, in spite of the 2SLS analysis and Heckman selection models. Second, this study assumes VCs' staging considerations without having insights into their actual staging intentions. Details about contractual negotiations are needed to remedy this. For instance, it would be interesting to know about pre-agreed milestones or alternative control mechanisms, such as entrepreneurial compensation schemes or board involvement (Sahlman 1990). Third, unstandardised profile photos were used to establish entrepreneurs' attractiveness. Even though no significant correlation exists between photo quality and attractiveness of the lead entrepreneur (Table 2), the use of standardised profile photos is preferred. Moreover, while the use of still photos are deemed reliable to estimate a target's physical attractiveness (Rhodes *et al.* 2011), they prevent the estimation of other attributes that could interact with attractiveness, such as tone of voice, height, and body movement. To address this, the future use of video-clips or real-life observations may be worthwhile.

Exciting research opportunities lie ahead in view of the study's findings and limitations. First, future studies can explore this study's pathway further by exploring other heuristics that may affect VCs' rational decision-making processes (Tversky and Kahneman 1974; Kahneman 2011). Second, as both attractiveness and ethnicity are given qualities, future research may fruitfully explore strategies and behaviours for entrepreneurs to compensate for a possibly disadvantaged position. Entrepreneurs' rhetorical qualities, for instance, could mitigate negative effects stemming from aforementioned givens (Allison, McKenny, and Short 2013). Moreover, the study of other types of individuating information may prove relevant, given that VCs and entrepreneurs

interact with one another more closely during staging. Potential candidates for female entrepreneurs are physical attributes such as weight and hip-to-weight ratio, which are factors known to affect perceptions of female attractiveness¹⁵ (Weeden and Sabini 2005). Height, among others, may be a factor relevant for male attractiveness (Felson and Bohrnstedt 1979). Third, to the extent that VCs care about sound and unbiased decision-making, procedures need to be put in place to mitigate undesired effects of heuristic thinking. Future research may investigate whether strategies to debias selection decisions can be transferred to the staging phase, or that other debiasing procedures need to be developed. Fourth and final, since the findings may be specific to VC staging, future studies may consider other professional contexts to further explore the generalisability and specificity of the attractiveness halo and similarity effect.

A more fundamental and provocative avenue for future research is to consider whether heuristics driven by attractiveness and ethnicity help or hamper VCs in making sound staging decisions. Recent evidence found that heuristic decision-making can result in correct judgements (Rieskamp and Otto 2006; Todd and Gigerenzer 2007; Rieskamp and Hoffrage 2008), suggesting that the dominant view that heuristics inevitably lead to errors is overly pessimistic (Goldstein and Gigerenzer 2002). Reasoning from an evolutionary perspective, some scholars argued that this fast-and-frugal type of decision-making may serve us particularly well in naturalistic decision situations characterised by time constraints, incomplete information, and computational constraints. As Zhang and Cueto (2017, 440) asserted, ‘in situations that require entrepreneurs to perform tasks that humans have been doing relatively consistently since the Pleistocene era, such as building relationships, leading teams, or understanding customers, some of the fast-and-frugal decision-making could still serve us exceptionally well.’ From this perspective, it is not unthinkable that some heuristics may actually benefit VCs during the funding process.

To conclude, venture capital investors stand for the challenging task of predicting a new venture’s true potential in view of many known and unknown unknowns. This study’s conclusions underline the inherently uncertain nature of their investments, and documented VCs’ reliance on heuristics to infer unobserved venture qualities and prospects. Given the large stakes involved, systematic, conscious, and effortful decision-making is much preferred. By uncovering factors that may bias VCs’ staging decisions, this study joins an emerging and promising line of scholarly inquiry on VC decision-making in general and staging decisions in particular. This study sought to create awareness of the heuristic nature of stage financing decisions, and in so doing hopefully contributes to their improvement.

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¹⁵The dataset used for this study contained too few female entrepreneurs and VCs to justify a separate analysis on the role of gender.

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References

- Adams, G. 1977. "Physical Attractiveness, Personality, and Social Reactions to Peer Pressure." *The Journal of Psychology* 96 (2): 287–296. doi:10.1080/00223980.1977.9915911.
- Agthe, M., and J. Maner. 2017. "Strong but Flexible: How Fundamental Social Motives Support but Sometimes Also Thwart Favorable Attractiveness Biases." *The Behavioral and Brain Sciences* 40: 40. doi:10.1017/S0140525X16000418.
- Agthe, M., M. Strobel, M. Spörrle, M. Pfundmair, and J. K. Maner. 2016. "On the Borders of Harmful and Helpful Beauty Biases: The Biasing Effects of Physical Attractiveness Depend on Sex and Ethnicity." *Evolutionary Psychology* 14 (2, April-June): 1–14. doi:10.1177/1474704916653968.
- Alfonso, M., H. Richter-Appelt, A. Tosti, M. Sanchez Viera, and M. García. 2005. "The Psychosocial Impact of Hair Loss Among Men: A Multinational European Study." *Current Medical Research and Opinion* 21 (11): 1829–1836. doi:10.1185/030079905X61820.
- Allison, T. H., A. F. McKenny, and J. C. Short. 2013. "The Effect of Entrepreneurial Rhetoric on Microlending Investment: An Examination of the Warm-Glow Effect." *Journal of Business Venturing* 28 (6): 690–707. doi:10.1016/j.jbusvent.2013.01.003.
- Anderson, C., O. P. John, D. Keltner, and A. M. Kring. 2001. "Who Attains Social Status? Effects of Personality and Physical Attractiveness in Social Groups." *Journal of Personality and Social Psychology* 81 (1): 116–132. doi:10.1037/0022-3514.81.1.116.
- Antonakis, J., S. Bendahan, P. Jacquart, and R. Lalive. 2014. "Causality and Endogeneity: Problems and Solutions." In *The Oxford Handbook of Leadership and Organizations*, edited by D. V. Day, 93–117. New York: Oxford University Press.
- Arkes, H. R., and C. Blumer. 1985. "The Psychology of Sunk Cost." *Organizational Behavior and Human Decision Processes* 35 (1): 124–140. doi:10.1016/0749-5978(85)90049-4.
- Atomico. 2018. *The State of European Tech*, 1–165. https://s3.amazonaws.com/known-production/big_attachments/88399dd16da0a1a8d18dc2b3c8aac3c4/The_State_of_European_Tech_Report_2018.pdf
- Balachandra, L., T. Briggs, K. Eddleston, and C. Brush. 2017. "Don't Pitch Like a Girl!: How Gender Stereotypes Influence Investor Decisions." *Entrepreneurship: Theory & Practice* 43 (1): 116–137. doi:10.1177/1042258717728028.
- Baron, R. A. 2004. "The Cognitive Perspective: A Valuable Tool for Answering Entrepreneurship's Basic "Why" Questions." *Journal of Business Venturing* 19 (2): 221–239. doi:10.1016/S0883-9026(03)00008-9.
- Baron, R. A., G. D. Markman, and M. Bollinger. 2006. "Exporting Social Psychology: Effects of Attractiveness on Perceptions of Entrepreneurs, Their Ideas for New Products, and Their Financial Success." *Journal of Applied Social Psychology* 36 (2): 467–492. doi:10.1111/j.0021-9029.2006.00015.x.
- Bengtsson, O., and D. H. Hsu. 2010. "How Do Venture Capital Partners Match with Startup Founders?" Available at SSRN: <https://ssrn.com/abstract=1568131>.
- Bengtsson, O., and D. H. Hsu. 2015. "Ethnic Matching in the U.S. Venture Capital Market." *Journal of Business Venturing* 30 (2): 338–354. doi:10.1016/j.jbusvent.2014.09.001.
- Blau, P. M. 1977. *Inequality and Heterogeneity*. New York: Free Press.

- Bono, J. E., and T. A. Judge. 2004. "Personality and Transformational and Transactional Leadership: A Meta-Analysis." *The Journal of Applied Psychology* 89 (5): 901–910. doi:10.1037/0021-9010.89.5.901.
- Bottazzi, L., M. Da Rin, and T. Hellmann. 2008. "Who are the Active Investors? ☆evidence from Venture Capital." *Journal of Financial Economics* 89 (3): 488–512. doi:10.1016/j.jfineco.2007.09.003.
- Brooks, A. W., L. Huang, S. W. Kearney, and F. E. Murray. 2014. "Investors Prefer Entrepreneurial Ventures Pitched by Attractive Men." *Proceedings of the National Academy of Sciences* 111 (12): 4427–4431. doi:10.1073/pnas.1321202111.
- Brown, G. K., and A. Langer. 2010. "Conceptualizing and Measuring Ethnicity." *Oxford Development Studies* 38 (4): 411–436. doi:10.1080/13600818.2010.525629.
- Budd, D., D. Himmelberger, T. Rhodes, T. E. Cash, and C. J. Gorman. 2000. "The Effects of Hair Loss in European Men: A Survey in Four Countries." *European Journal of Dermatology : EJD* 10 (2): 122–127.
- Bueschen, R. 2015. "The Surprising Bias of Venture Capital Decision-Making." Source: <https://techcrunch.com/2015/09/24/the-surprising-bias-of-venture-capital-decision-making/>. Accessed June 11, 2020.
- Busenitz, L. W., and J. B. Barney. 1997. "Differences Between Entrepreneurs and Managers in Large Organizations: Biases and Heuristics in Strategic Decision-Making." *Journal of Business Venturing* 12 (1): 9–30. doi:10.1016/S0883-9026(96)00003-1.
- Byrne, D. 1971. *The Attraction Paradigm*. New York: Academic Press.
- Capitán, L., D. Simon, T. Meyer, A. Alcaide, A. Wells, C. Bailón, R. J. Bellinga, T. Tenório, and F. Capitán-Cañadas. 2017. "Facial Feminization Surgery: Simultaneous Hair Transplant During Forehead Reconstruction." *Plastic and Reconstructive Surgery* 139 (3): 573–584. doi:10.1097/PRS.0000000000003149.
- Cash, T. F. 1990. "Losing Hair, Losing Points? The Effects of Male Pattern Baldness on Social Impression Formation." *Journal of Applied Social Psychology* 20 (2): 154–167. doi:10.1111/j.1559-1816.1990.tb00404.x.
- Cash, T. F. 2009. "Attitudes, Behaviors, and Expectations of Men Seeking Medical Treatment for Male Pattern Hair Loss: Results of a Multinational Survey." *Current Medical Research and Opinion* 25 (7): 1811–1820. doi:10.1185/03007990903005201.
- Chaiken, S., and Y. Trope. 1999. *Dual-Process Theories in Social Psychology*. New York: Guilford.
- Coetzee, V., J. M. Greeff, I. D. Stephen, D. I. Perrett, and C. McCormick. 2014. "Cross-Cultural Agreement in Facial Attractiveness Preferences: The Role of Ethnicity and Gender." *Plos One* 9 (7): 1–8. doi:10.1371/journal.pone.0099629.
- Cohen, J. 1988. *Statistical Power Analysis for the Behavioral Sciences*. 2nd ed. Hillsdale, NJ: Erlbaum.
- De Vries, G., E. Pennings, J. H. Block, and C. Fisch. 2017. "Trademark or Patent? The Effects of Market Concentration, Customer Type and Venture Capital Financing on Start-Ups' Initial IP Applications." *Industry and Innovation* 24 (4): 325–345. doi:10.1080/13662716.2016.1231607.
- Drover, W., L. Busenitz, S. Matusik, D. Townsend, A. Anglin, and G. Dushnitsky. 2017. "A Review and Road Map of Entrepreneurial Equity Financing Research: Venture Capital, Corporate Venture Capital, Angel Investment, Crowdfunding, and Accelerators." *Journal of Management* 43 (6): 1820–1853. doi:10.1177/0149206317690584.
- Eagly, A. H., R. D. Ashmore, M. G. Makhijani, and L. C. Longo. 1991. "What is Beautiful is Good, But...: A Meta-Analytic Review of Research on the Physical Attractiveness Stereotype." *Psychological Bulletin* 110 (1): 109–128. doi:10.1037/0033-2909.110.1.109.
- Eastwick, P. W., J. A. Richeson, D. Son, and E. J. Finkel. 2009. "Is Love Colorblind? Political Orientation and Interracial Romantic Desire." *Personality & Social Psychology Bulletin* 35 (9): 1258–1268. doi:10.1177/0146167209338524.
- Economist, 2020. "Do Venture Capital Firms Really Favour Men?" Source: <https://www.economist.com/graphic-detail/2020/01/10/do-venture-capital-firms-really-favour-men> Accessed June 11, 2020.
- Engel, D. 2004. "The Performance of Venture-Backed Firms: The Effect of Venture Capital Company Characteristics." *Industry and Innovation* 11 (3): 249–263. doi:10.1080/1366271042000265401.

- Felson, R. B., and G. W. Bohrnstedt. 1979. ““Are the Good Beautiful or the Beautiful Good?” the Relationship Between Children’s Perceptions of Ability and Perceptions of Physical Attractiveness.” *Social Psychology Quarterly* 42 (4, December): 386–392. doi:[10.2307/3033808](https://doi.org/10.2307/3033808).
- Fisman, R. J. 2003. “Ethnic Ties and the Provision of Credit: Relationship-Level Evidence from African Firms.” *Advances in Economic Analysis & Policy* 3 (1). doi:[10.2202/1538-0637.1211](https://doi.org/10.2202/1538-0637.1211).
- Fox, J. T., D. H. Hsu, and C. Yang. 2014. “Unobserved Heterogeneity in Matching Games.” *The Journal of Political Economy* 126 (4): 1339–1373. doi:[10.1086/697740](https://doi.org/10.1086/697740).
- Franke, N., M. Gruber, D. Harhoff, and J. Henkel. 2006. “What You are is What You Like—similarity Biases in Venture Capitalists’ Evaluations of Start-Up Teams.” *Journal of Business Venturing* 21 (6): 802–826. doi:[10.1016/j.jbusvent.2005.07.001](https://doi.org/10.1016/j.jbusvent.2005.07.001).
- Frevert, T. K., and L. S. Walker. 2014. “Physical Attractiveness and Social Status.” *Sociology Compass* 8 (3): 313–323. doi:[10.1111/soc4.12132](https://doi.org/10.1111/soc4.12132).
- Gao, Y., T. Maurer, and P. Mirmirani. 2018. “Understanding and Addressing Hair Disorders in Transgender Individuals.” *American Journal of Clinical Dermatology* 19 (4): 517–527. doi:[10.1007/s40257-018-0343-z](https://doi.org/10.1007/s40257-018-0343-z).
- Gibson, J. J. 1979. *The Ecological Approach to Visual Perception*. Boston, MA: Houghton Mifflin.
- Girman, C. J., T. Rhodes, F. R. W. Lilly, S. S. Guo, R. M. Siervogel, D. L. Patrick, and W. C. Chumlea. 1998. “Effects of Self-Perceived Hair Loss in a Community Sample of Men.” *Dermatology* 197 (3): 223–229. doi:[10.1159/000018001](https://doi.org/10.1159/000018001).
- Goldman, W., and P. Lewis. 1977. “Beautiful is Good: Evidence That the Physically Attractive are More Socially Skillful.” *Journal of Experimental Social Psychology* 13 (2): 125–130. doi:[10.1016/S0022-1031\(77\)80005-X](https://doi.org/10.1016/S0022-1031(77)80005-X).
- Goldstein, D. G., and G. Gigerenzer. 2002. “Models of Ecological Rationality: The Recognition Heuristic.” *Psychological Review* 109 (1): 75–90. doi:[10.1037/0033-295X.109.1.75](https://doi.org/10.1037/0033-295X.109.1.75).
- Gompers, P. 1995. “Optimal Investment, Monitoring and the Staging of Venture Capital.” *The Journal of Finance* 50 (5): 1461–1489. doi:[10.1111/j.1540-6261.1995.tb05185.x](https://doi.org/10.1111/j.1540-6261.1995.tb05185.x).
- Gompers, P., A. Kovner, and J. Lerner. 2009. “Specialization and Success: Evidence from Venture Capital.” *Journal of Economics & Management Strategy* 18 (3): 817–844. doi:[10.1111/j.1530-9134.2009.00230.x](https://doi.org/10.1111/j.1530-9134.2009.00230.x).
- Gompers, P., and J. Lerner. 2001. “The Venture Capital Revolution.” *Journal of Economic Perspectives* 15 (2): 145–168. doi:[10.1257/jep.15.2.145](https://doi.org/10.1257/jep.15.2.145).
- Guiso, L., P. Sapienza, and L. Zingales. 2009. “Cultural Biases in Economic Exchange?” *The Quarterly Journal of Economics* 124 (3): 1095–1131. doi:[10.1162/qjec.2009.124.3.1095](https://doi.org/10.1162/qjec.2009.124.3.1095).
- Hardin, R. 2002. *Trust and Trustworthiness*. New York: Russell Sage Foundation.
- Heckman, J. J. 1979. “Sample Selection as a Specification Error.” *Econometrica* 47 (1): 153–161. doi:[10.2307/1912352](https://doi.org/10.2307/1912352).
- Hegde, D., and J. Tumlinson. 2014. “Does Social Proximity Enhance Business Partnerships? Theory and Evidence from Ethnicity’s Role in U.S. Venture Capital.” *Management science* 60 (9): 2355–2380. doi:[10.1287/mnsc.2013.1878](https://doi.org/10.1287/mnsc.2013.1878).
- Hellmann, T., and M. Puri. 2002. “Venture Capital and the Professionalization of Start-Up Firms: Empirical Evidence.” *The Journal of Finance* 57 (1): 169–197. doi:[10.1111/1540-6261.00419](https://doi.org/10.1111/1540-6261.00419).
- Hosoda, M., E. F. Stone-Romero, and G. Coats. 2003. “The Effects of Physical Attractiveness on Job-Related Outcomes: A Meta-Analysis of Experimental Studies.” *Personnel Psychology* 56 (2): 431–462. doi:[10.1111/j.1744-6570.2003.tb00157.x](https://doi.org/10.1111/j.1744-6570.2003.tb00157.x).
- Hsu, D. H. 2004. “What Do Entrepreneurs Pay for Venture Capital Affiliation?” *The Journal of Finance* 59 (4): 1805–1844. doi:[10.1111/j.1540-6261.2004.00680.x](https://doi.org/10.1111/j.1540-6261.2004.00680.x).
- Hsu, D. H. 2007. “Experienced Entrepreneurial Founders, Organizational Capital, and Venture Capital Funding.” *Research Policy* 36 (5): 722–741. doi:[10.1016/j.respol.2007.02.022](https://doi.org/10.1016/j.respol.2007.02.022).
- Ibarra, H. 1995. “Race, Opportunity and Diversity of Social Circles in Managerial Networks.” *Academy of Management Review* 38 (3): 673–703. doi:[10.5465/256742](https://doi.org/10.5465/256742).
- Jackson, L. A., J. E. Hunter, and C. N. Hodge. 1995. “Physical Attractiveness and Intellectual Competence: A Meta-Analytic Review.” *Social Psychology Quarterly* 58 (2): 108–122. doi:[10.2307/2787149](https://doi.org/10.2307/2787149).

- Judge, T. A., C. Hurst, and L. S. Simon. 2009. "Does It Pay to Be Smart, Attractive, or Confident (Or All Three)? Relationships Among General Mental Ability, Physical Attractiveness, Core Self-Evaluations, and Income." *The Journal of Applied Psychology* 94 (3): 742–755. doi:[10.1037/a0015497](https://doi.org/10.1037/a0015497).
- Kahneman, D. 2011. *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux.
- Kahneman, D., and S. Frederick. 2002. "Representativeness Revisited: Attribute Substitution in Intuitive Judgment." In *Heuristics and Biases: The Psychology of Intuitive Judgment*, edited by T. Gilovich, D. Griffin, and D. Kahneman, 49–81. Cambridge, England: Cambridge University Press.
- Kalmijn, M. 1998. "Intermarriage and Homogamy: Causes, Patterns and Trends." *Annual Review of Sociology* 24 (1): 395–421. doi:[10.1146/annurev.soc.24.1.395](https://doi.org/10.1146/annurev.soc.24.1.395).
- Kaplan, S., B. E. Sensoy, and P. Strömbert. 2009. "Should Investors Bet on the Jockey or the Horse? Evidence from the Evolution of Firms from Early Business Plans to Public Companies." *The Journal of Finance* 64 (1): 75–115. doi:[10.1111/j.1540-6261.2008.01429.x](https://doi.org/10.1111/j.1540-6261.2008.01429.x).
- Kaplan, S., and P. Strömberg. 2003. "Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts." *The Review of Economic Studies* 70 (2): 281–315. doi:[10.1111/1467-937X.00245](https://doi.org/10.1111/1467-937X.00245).
- Kerr, W. R. 2008. "Ethnic Scientific Communities and International Technology Transfer." *The Review of Economics and Statistics* 90 (3): 518–537. doi:[10.1162/rest.90.3.518](https://doi.org/10.1162/rest.90.3.518).
- Kondo, A., K. Takahashi, and K. Watanabe. 2012. "Sequential Effects in Face-Attractiveness Judgment." *Perception* 41 (1): 43–49. doi:[10.1068/p7116](https://doi.org/10.1068/p7116).
- Langlois, J. H. 1986. "From the Eye of the Beholder to Behavioral Reality: Development of Social Behaviors and Social Relations as a Function of Physical Attractiveness." In *Physical Appearance, Stigma, and Social Behavior: The Ontario Symposium*, edited by C. P. Herman, M. P. Zanna, and E. T. Higgins, 23–51. Vol. 3. Hillsdale, NJ: Erlbaum.
- Langlois, J. H., L. Kalakanis, A. J. Rubenstein, A. Larson, M. Hallam, and M. Smoot. 2000. "Maxims or Myths of Beauty? A Meta-Analytic and Theoretical Review." *Psychological Bulletin* 126 (3): 390–423. doi:[10.1037/0033-2909.126.3.390](https://doi.org/10.1037/0033-2909.126.3.390).
- Lee, W. S., B. I. Ro, S. P. Hong, H. Bak, W. Y. Sim, and D. W. Kim, . . . T. H. Oh, C. -W. Ihm, H. C. Eun, O. S. Kwon, G. S. Choi. 2007. "A New Classification of Pattern Hair Loss That is Universal for Men and Women: Basic and Specific (BASP) Classification." *Journal of the American Academy of Dermatology* 57 (1): 37–46. doi:[10.1016/j.jaad.2006.12.029](https://doi.org/10.1016/j.jaad.2006.12.029).
- Li, Y. 2008. "Duration Analyses of Venture Capital Staging: A Real Options Perspective." *Journal of Business Venturing* 23 (5): 497–512. doi:[10.1016/j.jbusvent.2007.10.004](https://doi.org/10.1016/j.jbusvent.2007.10.004).
- Little, A. C., B. C. Jones, and L. M. DeBruine. 2011. "Facial Attractiveness: Evolutionary Based Research." *Philosophical Transactions of the Royal Society B* 366 (1571): 1638–1659. doi:[10.1098/rstb.2010.0404](https://doi.org/10.1098/rstb.2010.0404).
- Ma-Kellams, C., M. C. Wang, and H. Cardiel. 2017. "Attractiveness and Relationship Longevity: Beauty is Not What It is Cracked Up to Be." *Personal Relationships* 24 (1): 146–161. doi:[10.1111/pere.12173](https://doi.org/10.1111/pere.12173).
- Maner, J. K., M. T. Gailliot, D. A. Rouby, and S. L. Miller. 2007. "Can't Take My Eyes off You: Attentional Adhesion to Mates and Rivals." *Journal of Personality and Social Psychology* 93 (3): 389–401. doi:[10.1037/0022-3514.93.3.389](https://doi.org/10.1037/0022-3514.93.3.389).
- Maner, J. K., D. T. Kenrick, D. V. Becker, T. E. Robertson, B. Hofer, and S. L. Neuberg, . . . A. W. Delton, J. Butner, M. Schaller. 2005. "Functional Projection: How Fundamental Social Motives Can Bias Interpersonal Perception." *Journal of Personality and Social Psychology* 88 (1): 63–78. doi:[10.1037/0022-3514.88.1.63](https://doi.org/10.1037/0022-3514.88.1.63).
- Mao, A., W. Mason, S. Suri, D. J. Watts, and L. A. N. Amaral. 2016. "An Experimental Study of Team Size and Performance on a Complex Task." *Plos One* 11 (4): 1–22. doi:[10.1371/journal.pone.0153048](https://doi.org/10.1371/journal.pone.0153048).
- Marsden, P. V. 1987. "Core Discussion Networks of Americans." *American sociological review* 52 (1): 122–131. doi:[10.2307/2095397](https://doi.org/10.2307/2095397).

- Matusik, S. F., J. M. George, and M. B. Heeley. 2008. "Values and Judgment Under Uncertainty: Evidence from Venture Capitalist Assessments of Founders." *Strategic Entrepreneurship Journal* 2 (2): 95–115. doi:10.1002/sej.45.
- Ma, F., F. Xu, and X. Luo. 2015. "Children's and Adults' Judgments of Facial Trustworthiness: The Relationship to Facial Attractiveness." *Perceptual & Motor Skills: Perception* 121 (1): 179–198. doi:10.2466/27.22.PMS.121c10x1.
- Ma, F., F. Xu, and X. Luo. 2016. "Children's Facial Trustworthiness Judgments: Agreement and Relationship with Facial Attractiveness." *Frontiers in Psychology* 7 (499): 1–9. doi:10.3389/fpsyg.2016.00499.
- McClintock, E. A. 2010. "When Does Race Matter? Race, Sex, and Dating at an Elite University." *Journal of Marriage and the Family* 72 (1): 45–72. doi:10.1111/j.1741-3737.2009.00683.x.
- McNulty, J. K., L. A. Neff, and B. R. Karney. 2008. "Beyond Initial Attraction: Physical Attractiveness in Newlywed Marriage." *Journal of Family Psychology* 22 (1): 135–143. doi:10.1037/0893-3200.22.1.135.
- McPherson, M., L. Smith-Lovin, and J. M. Cook. 2001. "Birds of a Feather: Homophily in Social Networks." *Annual Review of Sociology* 27 (1): 415–444. doi:10.1146/annurev.soc.27.1.415.
- Meggison, W. L. 2004. "Toward a Global Model of Venture Capital?" *Journal of Applied Corporate Finance* 16 (1): 89–107. doi:10.1111/j.1745-6622.2004.tb00599.x.
- Meier, B. P., M. D. Robinson, M. S. Carter, and V. B. Hinsz. 2010. "Are Sociable People More Beautiful? A Zero-Acquaintance Analysis of Agreeableness, Extraversion, and Attractiveness." *Journal of Research in Personality* 44 (2): 293–296. doi:10.1016/j.jrp.2010.02.002.
- Murnieks, C. Y., J. M. Haynie, R. E. Wiltbank, and T. Harting. 2011. "I Like How You Think: Similarity as an Interaction Bias in the Investor – Entrepreneur Dyad." *Journal of Management Studies* 48 (7): 1533–1561. doi:10.1111/j.1467-6486.2010.00992.x.
- Muscarella, F., and M. R. Cunningham. 1996. "The Evolutionary Significance and Social Perception of Male Pattern Baldness and Facial Hair." *Ethology & Sociobiology* 17 (2): 99–117. doi:10.1016/0162-3095(95)00130-1.
- Nahata, R., S. Hazarika, and K. Tandon. 2014. "Success in Global Venture Capital Investing: Do Institutional and Cultural Differences Matter?" *The Journal of Financial and Quantitative Analysis* 49 (4): 1039–1070. doi:10.1017/S0022109014000568.
- Naumann, L. P., S. Vazire, P. J. Rentfrow, and S. D. Gosling. 2009. "Personality Judgments Based on Physical Appearance." *Personality & Social Psychology Bulletin* 35 (12): 1661–1671. doi:10.1177/0146167209346309.
- OECD 2013. "Entrepreneurship at a Glance 2013". doi: 10.1787/entrepreneur_aag-2013-en.
- Oreg, S., and M. Bayazit. 2009. "Prone to Bias: Development of a Bias Taxonomy from an Individual Difference Perspective." *Review of General Psychology* 13 (3): 175–193. doi:10.1037/a0015656.
- Rhodes, G. 2006. "The Evolutionary Psychology of Facial Beauty." *Annual Review of Psychology* 57 (1): 199–226. doi:10.1146/annurev.psych.57.102904.190208.
- Rhodes, G., H. C. Lie, N. Thevaraja, L. Taylor, N. Iredell, C. Curran, S. Q. C. Tan, P. Carnemolla, and L. W. Simmons. 2011. "Facial Attractiveness Ratings from Video-Clips and Static Images Tell the Same Story." *Plos One* 6 (11): 1–6. doi:10.1371/journal.pone.0026653.
- Rhodes, G., S. Yoshikawa, A. Clark, K. Lee, R. McKay, and S. Akamatsu. 2001. "Attractiveness of Facial Averageness and Symmetry in Non-Western Cultures: In Search of Biologically Based Standards of Beauty." *Perception* 30 (5): 611–625. doi:10.1068/p3123.
- Rieskamp, J., and U. Hoffrage. 2008. "Inferences Under Time Pressure: How Opportunity Costs Affect Strategy Selection." *Acta psychologica* 127 (2): 258–276. doi:10.1016/j.actpsy.2007.05.004.
- Rieskamp, J., and P. E. Otto. 2006. "SSL: A Theory of How People Learn to Select Strategies." *Journal of Experimental Psychology General* 135 (2): 207–236. doi:10.1037/0096-3445.135.2.207.
- Robins, R. W., H. M. Hendin, and K. H. Trzesniewski. 2001. "Measuring Global Self-Esteem: Construct Validation of a Single-Item Measure and the Rosenberg Self-Esteem Scale." *Personality & Social Psychology Bulletin* 27 (2): 151–161. doi:10.1177/0146167201272002.
- Ruffle, B. J., and Z. Shtudiner. 2015. "Are Good-Looking People More Employable?" *Management science* 61 (8): 1760–1776. doi:10.1287/mnsc.2014.1927.

- Sahlman, W. 1990. "The Structure and Governance of Venture Capital Organizations." *Journal of Financial Economics* 27 (2): 473–524. doi:[10.1016/0304-405X\(90\)90065-8](https://doi.org/10.1016/0304-405X(90)90065-8).
- Saxenian, A. L. 2006. *The New Argonauts: Regional Advantage in a Global Economy*. Cambridge, MA: Harvard University Press.
- Tian, X. 2011. "The Causes and Consequences of Venture Capital Stage Financing." *Journal of Financial Economics* 101 (1): 132–159. doi:[10.1016/j.jfineco.2011.02.011](https://doi.org/10.1016/j.jfineco.2011.02.011).
- Todd, P. M., and G. Gigerenzer. 2007. "Environments That Make Us Smart: Ecological Rationality." *Current Directions in Psychological Science* 16 (3): 167–171. doi:[10.1111/j.1467-8721.2007.00497.x](https://doi.org/10.1111/j.1467-8721.2007.00497.x).
- Todorov, A., A. Mandisodza, A. Goren, and C. Hall. 2005. "Inferences of Competence from Faces Predict Election Outcomes." *Science* 308 (5728): 1623–1626. doi:[10.1126/science.1110589](https://doi.org/10.1126/science.1110589).
- Todorov, A., M. Pakrashi, and N. N. Oosterhof. 2009. "Evaluating Faces on Trustworthiness After Minimal Time Exposure." *Social cognition* 27 (6): 813–833. doi:[10.1521/soco.2009.27.6.813](https://doi.org/10.1521/soco.2009.27.6.813).
- Tversky, A., and D. Kahneman. 1974. "Judgment Under Uncertainty: Heuristics and Biases." *Science* 185 (4157): 1124–1131. doi:[10.1126/science.185.4157.1124](https://doi.org/10.1126/science.185.4157.1124).
- Tversky, A., and D. Kahneman. 1986. "Rational Choice and the Framing of Decisions." *The Journal of Business* 59 (4): 251–278. doi:[10.1086/296365](https://doi.org/10.1086/296365).
- Van der Donk, J., J. A. M. Hunfeld, J. Passchier, K. J. Knegt-Junk, and C. Nieboer. 1994. "Quality of Life and Maladjustment Associated with Hair Loss in Women with Alopecia Androgenetica." *Social Science & Medicine* 38 (1): 159–163. doi:[10.1016/0277-9536\(94\)90311-5](https://doi.org/10.1016/0277-9536(94)90311-5).
- Vogel, R., T. X. Puhon, E. Shehu, D. Kliger, and H. Beese. 2014. "Funding Decisions and Entrepreneurial Team Diversity: A Field Study." *Journal of Economic Behavior & Organization* 107 (B): 595–613. doi:[10.1016/j.jebo.2014.02.021](https://doi.org/10.1016/j.jebo.2014.02.021).
- Wang, S., and H. Zhou. 2004. "Staged Financing in Venture Capital: Moral Hazard and Risks." *Journal of Corporate Finance* 10 (1): 131–155. doi:[10.1016/S0929-1199\(02\)00045-7](https://doi.org/10.1016/S0929-1199(02)00045-7).
- Webber, R. 2007. "Using Names to Segment Customers by Cultural, Ethnic, or Religious Origin." *Journal of Direct, Data and Digital Marketing Practice* 8 (3): 226–242. doi:[10.1057/palgrave.dddmp.4350051](https://doi.org/10.1057/palgrave.dddmp.4350051).
- Weeden, J., and J. Sabini. 2005. "Physical Attractiveness and Health in Western Societies: A Review." *Psychological Bulletin* 131 (5): 635–653. doi:[10.1037/0033-2909.131.5.635](https://doi.org/10.1037/0033-2909.131.5.635).
- Williamson, D., M. Gonzalez, and A. Y. Finlay. 2001. "The Effect of Hair Loss on Quality of Life." *Journal of the European Academy of Dermatology and Venereology* 15 (2): 137–139. doi:[10.1046/j.1468-3083.2001.00229.x](https://doi.org/10.1046/j.1468-3083.2001.00229.x).
- Wogalter, M. S., and J. A. Hosie. 1991. "Effects of Cranial and Facial Hair on Perceptions of Age and Person." *The Journal of Social Psychology* 31 (4): 589–591. doi:[10.1080/00224545.1991.9713892](https://doi.org/10.1080/00224545.1991.9713892).
- Zebrowitz-McArthur, L., and R. M. Baron. 1983. "Toward an Ecological Theory of Social Perception." *Psychological Review* 90 (3): 215–238. doi:[10.1037/0033-295X.90.3.215](https://doi.org/10.1037/0033-295X.90.3.215).
- Zebrowitz, L. A., and J. M. Montepare. 2008. "Social Psychological Face Perception: Why Appearance Matters." *Social and Personality Psychology Compass* 2 (3): 1497–1517. doi:[10.1111/j.1751-9004.2008.00109.x](https://doi.org/10.1111/j.1751-9004.2008.00109.x).
- Zebrowitz, L. A., J. M. Montepare, and H. K. Lee. 1993. "They Don't All Look Alike: Individual Impressions of Other Racial Groups." *Journal of Personality and Social Psychology* 65 (1): 85–101. doi:[10.1037/0022-3514.65.1.85](https://doi.org/10.1037/0022-3514.65.1.85).
- Zebrowitz, L. A., and G. Rhodes. 2004. "Sensitivity to "Bad Genes" and the Anomalous Face Overgeneralization Effect: Cue Validity, Cue Utilization, and Accuracy in Judging Intelligence and Health." *Journal of Nonverbal Behavior* 28 (3): 167–185. doi:[10.1023/B:JONB.0000039648.30935.1b](https://doi.org/10.1023/B:JONB.0000039648.30935.1b).
- Zhang, S. X., and J. Cueto. 2017. "The Study of Bias in Entrepreneurship." *Entrepreneurship Theory & Practice* 41 (3): 419–454. doi:[10.1111/etap.12212](https://doi.org/10.1111/etap.12212).
- Zider, B. 1998. "How Venture Capital Works." *Harvard Business Review* 76 (6): 131–139. November – December.