WHICH BOUNDARIES? HOW MOBILITY NETWORKS ACROSS COUNTRIES AND STATUS GROUPS AFFECT THE CREATIVE PERFORMANCE OF ORGANIZATIONS

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Research summary: *Losing key employees to competitors allows an organization to engage in external boundary-spanning activities. It may benefit the organization through access to external knowledge, but may also increase the risks of leaking knowledge to competitors. We propose that the destination of departed employees is a crucial contingency: benefits or risks only materialize when employees leave for competitors that differ from the focal organization along significant dimensions, such as country or status group. In the context of the global fashion industry, we find that key employees' moves to foreign competitors may increase (albeit at a diminishing rate) their former employers' creative performance. Furthermore, firms may suffer from losing key employees to higher- or same-status competitors, but may benefit from losing them to lower-status competitors.*

Managerial summary: *Losing key employees to competitors can provide organizations with access to external knowledge, but increase risks of leaking knowledge to competitors. We find that an organization's access to external knowledge and its risks of knowledge leakage through employee mobility may be affected by whether its employees leave for competitors in a foreign country or in a different status group. In the context of the global fashion industry, we show that key employees' moves to foreign competitors increase (up to a point) their former employers' creative performance. Furthermore, firms may suffer from losing key employees to higher- or same-status competitors, but benefit from losing them to lower-status competitors. Hence, executives in creative industries and possibly beyond could welcome losing employees to competitors in foreign countries or to lower-status competitors.* Copyright © 2016 John Wiley & Sons, Ltd.

INTRODUCTION

An organization enjoys superior creative performance when it consistently generates novel and useful products or services (Almeida, 1996; Cattani and Ferriani, 2008; Godart, Shipilov, and Claes, 2014). Creative performance depends on multiple social determinants (Cattani and Ferriani, 2008;

Perry-Smith and Shalley, 2003). One such determinant is the presence of "boundary spanners", individuals who build social ties to other organizations (Barrett *et al.*, 2012; Tushman and Scanlan, 1981). The existing literature provides a good understanding of the mechanisms through which organizations can benefit from boundary spanners, who provide access to new ideas from other firms. As the focal organization recombines this external knowledge with its own, it can consistently generate new ideas that result in novel and useful output (e.g., Rosenkopf and Nerkar, 2001). However, the benefits of boundary spanning may be offset by its costs: just as boundary spanners can access external

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knowledge, they can also leak the organization's own knowledge to competitors (Aime *et al.*, 2010; Somaya, Williamson, and Lorinkova, 2008).

Available research assumes that these costs and benefits materialize whenever employees span the formal boundary that separates their organization from any other (e.g., Corredoira and Rosenkopf, 2010; Godart *et al.*, 2014; Rosenkopf *et al.*, 2001; Uzzi and Spiro, 2005). This may be neglecting an important contingency: boundary spanners should generate different benefits and costs for their organizations depending on *which boundary* they span. Firms are likely to benefit only when boundary spanners connect them to competitors whose knowledge is significantly new relative to what the firm already knows. Similarly, a firm should experience costs only when its boundary spanners leak knowledge to competitors that can exploit this knowledge at the expense of the focal firm. In this article, we focus on geography and status differences as two factors that affect these benefits and costs. Specifically, we examine the consequences of an organization's losing employees to competitors in foreign countries or different status groups.

Employee mobility is a particular form of boundary spanning that can trigger the two mechanisms discussed above. As current employees of the focal firm stay in touch with former colleagues or merely pay attention to what their former colleagues are doing, they are likely to incorporate competitors' knowledge into the focal firm's ideas and output (Corredoira and Rosenkopf, 2010; Dokko and Rosenkopf, 2010). Likewise, by hiring the focal firm's employees, competitors can learn what the firm knows and incorporate this knowledge into their own output (Phillips, 2002). Hence, both by losing employees to competition and by hiring them from competition, the firm becomes embedded in the industrywide mobility network. Arguing that the benefits of access to knowledge and the costs of knowledge leakage strengthen at different rates with the degree of external mobility, prior research has suggested the existence of a nonlinear relationship between the number of competitors to which a focal firm loses its employees and its creative performance (Godart *et al.*, 2014).

Yet, much like other studies on boundary spanning, research on employee mobility and organizational creative performance remains agnostic to differences among the competitors to which a firm loses its employees, particularly to differences

driven by the competitors' geographic location and status (Corredoira and Rosenkopf, 2010; Dokko and Rosenkopf, 2010; Godart *et al.*, 2014). We propose that by crossing country or status boundaries in search of new jobs, employees may affect the balance of benefits and costs experienced by their former employer as a result of their mobility. This is because firms located in different countries or status groups have different knowledge from those located within the same country or status group. Thus, when an organization's employees move to competitors in foreign countries or different status groups, they affect both their former organization's ability to use knowledge from these competitors and also the risks of competitors' benefitting from the knowledge of the focal organization.

We investigate our claims in a global, industrywide longitudinal dataset (2000–2010) comprising information on the mobility of designers across high-end fashion houses and these houses' ability to produce creative fashion collections. Our findings suggest that losing employees to foreign competitors has a positive (concave) relationship with the organization's creative performance, yet losing people to domestic competitors has no impact. We also find that firms tend to benefit from losing employees to lower-status competitors, but suffer from losing employees to the same or higher-status competitors.

This article contributes to research on how boundary spanning in social networks—and especially the networks formed through employee mobility—affects organizational creativity (Cattani and Ferriani, 2008; Dokko and Rosenkopf, 2010; Godart *et al.*, 2014). Our results also offer more precise prescriptions for organizations than have been available to date: instead of merely "spanning boundaries" to become exposed to novelty, organizations could strive to span specific types of boundaries, and avoid spanning others.

GEOGRAPHY, STATUS, AND CREATIVE PERFORMANCE

The notion of formal organizational boundaries is a critical building block of organization theory. Formal external boundaries separate organizations from the outside world (McEvily, Soda, and Tortoriello, 2014). These boundaries emerge as organizations minimize transaction costs (Williamson, 1981) or take advantage of

efficiencies in internal storage and transfer of knowledge (Kogut and Zander, 1992). Transferring knowledge across formal boundaries is often challenging, especially when knowledge is tacit (Rosenkopf *et al.*, 2001).

Some individuals—boundary spanners—have social relationships that cut across formal organizational boundaries and help their current employer access external knowledge. External boundary-spanning network ties represent a distinct form of exploration (March, 1991), as they enable an organization to acquire new knowledge that is not available internally (Henderson and Cockburn, 1994). Provided that boundary spanners share knowledge inside their organization, other employees can then incorporate these new inputs into the creative process and generate novel idea combinations.

External boundary spanning can take a variety of forms. As engineers or scientists feel the need to access external knowledge for R&D work, they build on the research and patents of other companies (Rosenkopf *et al.*, 2001). More recently, cross-company employee mobility has emerged as an important purveyor of external boundary-spanning ties. Many industries are increasingly characterized by "boundaryless careers" (Bidwell and Briscoe, 2010): individuals regularly change employers, often leaving one firm for its competitors or clients. Employee mobility to clients is considered uniformly beneficial because it helps the firm acquire new business (Somaya *et al.*, 2008). Yet there are also advantages to losing employees to competitors. Indeed, departed individuals often keep communicating with their former colleagues (Corredoira and Rosenkopf, 2010: 161). This helps their former employer learn what competitors are currently working on. Even in the absence of explicit communication between the departed individual and his or her former colleagues, an employee's movement to a competitor can prompt former colleagues to pay more attention to what this competitor is doing. This occurs because losing employees to a competitor gives saliency to this competitor's work in the eyes of the focal firm's members. Consistent with these arguments, Corredoira and Rosenkopf (2010) found that firms were more likely to cite the patents of competitors that hired their departed employees.

Despite these benefits, boundary-spanning relationships can also be costly: losing employees to competitors means transferring knowledge to them. An employee who moves from one firm to another not only carries abstract appreciation of the firm's practices and representations, but can also export his former employer's most recent knowledge. In line with this argument, Phillips (2002) finds that law firms that lost employees to competitors have a high likelihood of failure, especially when departed employees occupied highly ranked positions.

A shortcoming of research on boundary spanning in the context of boundaryless careers (Corredoira and Rosenkopf, 2010; Dokko and Rosenkopf, 2010; Godart *et al.*, 2014) is its ambivalence as to how the competitors to which a firm loses its employees are meaningfully different from the focal firm. Geography and status are two important sources of such differences. Employee mobility across geographies or status groups links the focal organization to different communities of practice. Communities are defined as "relatively homogenous sectors occupied by actors who are likely to share common values, attitudes and interests" (Knoke *et al.*, 1996: 23), demarcated by boundaries with different degrees of institutionalization. Some boundaries are supported by stable and objective sustaining mechanisms, whereas others are more flexible and are sustained by intersubjective mental maps of industry members. Country borders and status groups represent two extremes of this continuum. On the one hand, country borders are highly institutionalized boundaries that are sustained by geography and the state (Elias and Jephcott, 1982), and crossing them involves mobility across what Bell and Zaheer (2007) aptly label "geographic holes." On the other hand, boundaries between status groups are institutionalized to a much lesser extent and are based on intersubjective agreement between different stakeholders regarding the relative quality rankings of market participants (Phillips and Zuckerman, 2001).

The diversity of knowledge is likely to be lower within status and geographic boundaries than across them. Furthermore, relative quality rankings—on the basis of which the status boundaries are built (Podolny, 2005)—may affect the distribution of audiences' attention on the producers. This has implications for the perceptions of producers' creativity, as higher-status producers tend to attract more attention and receive greater credit for their ideas than lower-status producers. Taken together, status and geographic positions of competitors represent salient environmental and institutional

factors that affect the diversity of knowledge as well as the intensity of competition for ideas to which an organization is exposed when it generates and implements novel and useful ideas. This, in turn, should affect the payoffs which firms can obtain from employee mobility (Mawdsley and Somaya, 2016).[1]

Crossing national boundaries

Knowledge pools are geographically localized (Almeida, 1996), so that knowledge is more homogenous within geographic locations than across them (Bell and Zaheer, 2007). The homogenization of knowledge within locations happens because co-located individuals meet and exchange knowledge at lower cost than those who are geographically separated (Saxenian, 1996) and co-located individuals are likely to share similar belief systems (James, 2007). In addition to simple geographic proximity, national borders also demarcate different pools of knowledge (Oettl and Agrawal, 2008). These borders are highly institutionalized in that they delimit societies with different cultures and state institutions (Barkey and Parikh, 1991). One can easily find cultural differences across national borders: commonplace practices in one country may appear vastly foreign in another (Hofstede, 1980; Schwartz, 1994).

There is a reason to expect that companies will neither benefit nor suffer from personnel loss to competitors in the same country. When domestic competitors hire the focal firm's employees, the remaining employees will not learn ideas through the knowledge-sharing and attention-focusing channels that would give them a competitive edge vis-à-vis their competitors. This is because domestic competitors are exposed to similar cultural practices and have the same belief systems as the focal firm. Furthermore, the costs of outward mobility (i.e., from the focal firm to competitors) within an organization's home country will also be limited because the practices transferred by

departed individuals to competitors are not culturally novel or useful from their competitors' point of view. Hence, one could expect that there will be no relationship between the number of domestic competitors to which the firm loses its employees and a firm's creative performance.

However, there could be a nonlinear (inverted U-shaped) relationship between mobility to *foreign* competitors and creative performance. When mobility to foreign competitors initially starts to increase, the firm will obtain significant benefits relative to the baseline case of not losing employees to foreign competition. This is because the organization's remaining employees are likely to keep having conversations and interactions with departed employees who now work in cultural environments with different values, attitudes, and interests, or simply to pay more attention to what their former colleagues' new employers are doing in these environments. By contrast, the employees in a firm that experiences no personnel loss to foreign competitors will not receive a comparable exposure (or will not pay as much attention) to foreign cultural environments. The benefits from access to novel cross-cultural ideas will satiate, however, when a firm loses people to too many foreign competitors: once the firm receives too many culturally diverse ideas from prior employees, its current employees will either start ignoring some of them or feel overwhelmed by the breadth of possible choices (Grant and Schwartz, 2011).

On the cost side, the departures of employees to foreign competitors can increase the likelihood of transferring the organization's practices to them (Aime *et al.*, 2010), which is less likely to occur when the firm does not lose employees to foreign competitors. Given that knowledge pools are geographically localized, foreign competitors typically have access to their own culturally appropriate set of practices. By importing practices from another country through hiring, a competitor's set of choices for product and service ideas increases. These costs escalate with an increase in the number of foreign firms to which the focal firm loses its former employees.

Given the preceding arguments, one should expect the marginal benefits of employee loss to competitors in different countries to exceed the marginal costs when the number of foreign competitors to which a firm has lost employees is low to moderate. This will result in an initial increase of creative performance relative to the baseline

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[1] Our theory assumes a ceteris paribus clause with respect to the heterogeneity of individuals. That is, when we argue for the knowledge flow and attention-focusing effects resulting from a firm's personnel loss to competitors, we assume that the quality of its former employees' human capital is held constant (Chadwick and Dabu, 2009; Coff, 1997). We designed our empirical analyses to directly control for the quality of mobile individuals as well as for the quality of those who remain in the fashion houses.

case of no personnel loss to foreign competitors. When the number of foreign competitors to which the firm has lost employees is high, the marginal costs could offset marginal benefits, resulting in the subsequent reduction of creative performance. Thus, we propose the first hypothesis:

Hypothesis 1 (H1): There is an inverted U-shaped relationship between the number of foreign competitors to which a firm loses its employees and this firm's creative performance.

Crossing status boundaries

Status signals quality, especially when quality is difficult to determine ex ante (Podolny, 2005). Status stratification emerges when actors are ranked according to their relative status (Bothner, Kim, and Smith, 2012), so that most industries have commonly "agreed-upon" high-, medium-, and low-status groups (Phillips and Zuckerman, 2001). Such status hierarchies are not formalized, but they are enacted and sustained via the stakeholders' intersubjective agreement (Podolny, 2005).

The products of higher-status firms attract more attention from customers than those of lower-status firms (Podolny, 1993). Likewise, the ideas generated by higher-status firms are considered more legitimate than those of lower-status firms. As higher-status players tend to be trendsetters in their industries (Rao, Greve, and Davis, 2001), their opinions often influence other industry members. By contrast, lower-status firms frequently possess ideas that break from the industry's conventions (Cattani and Ferriani, 2008). For example, many twentieth-century breakthrough innovations in art (e.g., cubism [Sgourev, 2013]), science (e.g., relativity theory), or even financial markets (e.g., junk bonds) initially came from low-status players.

Status positions, and the knowledge to which individuals who occupy such positions are exposed, are maintained through homophilous attachment and socialization. Higher-status actors tend to associate with other high-status actors to preserve their exclusivity and avoid leaking their status to lower-status actors or be "contaminated" by them; therefore the latter are forced to associate with one another (Podolny, 2005). Knowledge exchange through social ties socializes actors of similar status into having similar kinds of ideas. For example, high-status fashion houses employ high-status designers—many of whom received elite training in prestigious schools (e.g., the Parsons School of Design in New York or the École de la Chambre Syndicale de la Couture Parisienne in Paris). These individuals would, for example, agree that clothing has to be properly stitched together. Yet low-status designers might try to challenge this convention. This happens because a peripheral position helps low-status actors champion divergent ideas without the fear of conflicting with the accepted norms of the field (Perry-Smith and Shalley, 2003; Phillips and Zuckerman, 2001).

Much like a former employee crossing a national border may help their prior employer explore novel ideas, a former employee crossing a status boundary—through the acceptance of a job with a competitor belonging to a different status group—can facilitate their past employer's exploratory search through spanning status boundaries. Employee mobility across status groups could provide the former employer with access to new ideas—i.e., ideas available in the other status group that are either unknown to the focal organization or to which the focal organization has not yet paid enough attention. Depending on the destination of employee mobility, the organization can get two kinds of ideas: new legitimate ideas from higher-status competitors that do not involve radical departure from the industry convention, or new radical ideas from lower-status competitors that may even be new to the industry (Cattani and Ferriani, 2008).

Losing employees to higher-status competitors is likely to generate significant benefits and costs. This type of mobility establishes knowledge exchange and attention-focusing channels around legitimate yet currently untapped (new) ideas that the firm's current employees can incorporate into new products. By contrast, an organization that does not lose employees to higher-status competitors will not have access to such ideas. The benefits of exposure to these ideas may satiate with an increase in the number of higher-status competitors that hire the firm's employees, as the firm's employees become overwhelmed and start ignoring some of their ideas.

At the same time, the status of a former employee's new employer is also likely to dramatically affect the costs of outward mobility for the focal firm. Indeed, status hierarchies give rise to a "Matthew effect" whereby high-status actors obtain greater recognition for a given accomplishment than lower-status actors receive for a similar

achievement (Merton, 1968). If a higher-status competitor learns new ideas from another firm's former employees and incorporates them into its own products, then this higher-status competitor is likely to get more credit for these ideas than the focal firm where they originated. This competitor's output is also likely to attract more of audiences' attention if the competitor has higher status than the firm where the original ideas came from. As a result, the true originator of these ideas is likely to be perceived as offering less-novel products. The costs of employee loss to higher-status competitors will grow with an increase in the number of competitors to which the firm has lost its talent. This is because audiences will be increasingly likely to forget (or might not even bother to observe) that such competitors' ideas originated within the focal firm. By contrast, the absence of employee losses to higher-status competitors can help the organization to avoid the risks of feeding the competitors' creative pipelines.

When the number of higher-status competitors that recruit the firm's employees starts to increase from low to moderate, one should expect the marginal benefits of employee loss to higher-status competitors to initially exceed the marginal costs. This is because access to some new legitimate ideas is better than no access, and also because the organization is leaking its ideas to only a handful of higher-status competitors. This will result in an initial increase of creative performance relative to the baseline case of no personnel loss to higher-status competitors. When the number of such higher-status competitors is high, the marginal costs of employee loss would offset its marginal benefits. This is because the benefits of exposure to legitimate ideas will satiate, as the firm cannot take advantage of all of them, but the costs of feeding the higher-status competitors' pipelines will escalate, as now there is a very large number of higher-status competitors that could appropriate the focal firm's ideas. This will eventually result in the reduction of a firm's creative performance. Thus, we propose the second hypothesis:

Hypothesis 2 (H2): There is an inverted-U-shaped relationship between the number of higher-status competitors to which a firm loses its employees and this firm's creative performance.

Losing employees to lower-status competitors is also likely to impact an organization's creative performance because it involves mobility across a status boundary. When a firm loses employees to lower-status competitors, it gains more access to new nonconformist ideas that break with the mainstream, relative to the baseline case of no mobility to such competitors. Yet when a firm's employees leave for lower-status competitors, the resulting transfer of practices is unlikely to generate significant costs because the focal firm's higher status will always attract the audience's attention to its own products, including in instances when the firm incorporates ideas from the lower-status competitors. In turn, even if lower-status competitors incorporate the focal firm's ideas into their products, the audiences' judgments will not penalize the products of the focal firm because of its higher status. Since the benefits of increased access to sources of nonconformist ideas will grow with an increase in the number of lower-status competitors that hire the firm's employees, but the costs do not, then the following should be true:

Hypothesis 3 (H3): There is a positive relationship between the number of lower-status competitors to which a firm loses its employees and this firm's creative performance.

By contrast, when a firm loses employees to same-status competitors, its ability to access new legitimate or nonconformist ideas is limited because it likely already has access to similar ideas internally. Likewise, the costs of transferring the firm's ideas to same-status competitors are unlikely to be high because competitors already share similar ideas within the same status group. Hence, we do not expect a significant relationship between the number of same-status competitors that hire the focal firm's employees and its creative performance.

DATA AND METHODS

Study setting

We conducted this study in the context of the global high-end fashion industry. This industry offers an excellent opportunity to explore the link between the mobility of employees and the creativity of their ex-firms: in fashion, creativity is paramount to commercial success and talent mobility is the norm

(Caves, 2000; Godart and Mears, 2009). Despite the rivalries between their fashion houses, designers consider themselves as members of a creative community that transcends the houses' boundaries and encompasses the whole industry. The industry is filled with examples of "reverse knowledge transfers" as a result of losing employees to competition. Appendix 1 in File S1 provides two salient examples that illustrate the transfer of knowledge across country boundaries and status boundaries.

Data collection and variables

We constructed the industrywide dataset on the global high-end fashion industry over 21 fashion seasons—covering both Fall/Winter and Spring/Summer collections—and 261 fashion houses on which we did not have missing values for variables used in this study. Our data spans the period from 2000 through 2010. We acquired this data mostly from public sources, such as industry publications and company websites. First, we identified firms by collecting the names of all houses that had organized major fashion shows over the period considered (Breward, 2003; Kawamura, 2005, 2011). Second, we collected career histories of designers who worked for these houses from industry encyclopedias (Price Alford and Stegemeyer, 2009; Vergani, 2010), as well as from leading industry publications (e.g., *Women's Wear Daily*, *Journal du Textile*, *Vogue*). We also used websites (e.g., fmd.com, nymag.com, style.com) and Factiva. Data on designers span a period starting in the 1930s and ending in 2010. We collected information on designers before and after they became creative directors, which allowed us to avoid sampling on designers' mobility during a particular career stage. We also conducted over 40 interviews with industry insiders between 2007 and 2014.

Dependent variable

To compute our dependent variable—*Creative Performance*—we accessed the fashion collections' creativity ratings in the reference French trade magazine *Journal du Textile (JdT)* (Barkey and Godart, 2013; Crane, 1997). To construct this measure, *JdT* asks industrial buyers to evaluate the creativity of fashion collections in both Fall/Winter and Spring/Summer fashion shows. To buyers, creativity is a combination of the novelty of a collection as well as their assessment of the probability that

this collection will actually get sold in stores. *JdT* asks the buyers to give 20 points to the most creative collection for the given season, and 0 points to collections that they do not think are creative. Each buyer is able to give points to a maximum of 20 houses. We collected the ratings that each individual buyer gave to each individual collection. Our dependent variable incorporates the average number of points that a given fashion house's collection received from all of the buyers for a particular season.[2]

Independent variables

The fashion industry boasts substantial within-country and between-country mobility. Appendix 2 in File S1 presents a matrix of employee mobility events within and across countries between 2000 and 2010. Diagonal values show how many individuals have changed jobs within a country. Entries in row (i) and column (j) indicate how many people left a house located in country (i) to work in a house located in country (j).

We used six-year windows to construct mobility-related theoretical variables. When an organization loses employees to competition, it becomes embedded in an industry's mobility network. We computed a *Domestic Mobility Out-Degree* as the number of houses within the same country to which the focal fashion house is connected through outward mobility of its past designers in a given six-year period. For example, if between 2000 and 2005, six designers left a U.S. house and joined four different U.S. houses, then the focal house's *Domestic Mobility Out-Degree* would be four. Following Godart *et al.* (2014), we computed *Foreign Mobility Out-Degree* as the number of houses across different countries to which the focal fashion house becomes connected through designers' outward mobility. For example, if six designers left a U.S. house and joined two

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[2] Two previous papers used *JdT* scores under somewhat different labels. Godart *et al.* (2014) used the sum of points given by the raters and labeled this measure *Creative Market Performance*, while Godart *et al.* (2015) used the average of points and labeled their measure *Creative Innovations*. The different labels, although being synonymous and both referring to the creativity of fashion houses, highlight slightly different angles—market success in a competitive environment for talent in the former case, and the creativity of collections (product innovations) in the latter. In the present study we compute our dependent variable in the same way as in Godart *et al.* (2015) and label it for simplicity *Creative Performance*.

different houses in France, then the house's *Foreign Mobility Out-Degree* would be two.

To operationalize mobility within/across status groups, we followed Godart *et al.* (2014) and created a measure that would accurately reflect the status of the fashion houses. We did so through identifying the extent to which houses shared fashion models during the fashion shows. We exploited the fact that during every fashion season there is a shortage of sought-after fashion models. Since a model cannot appear in an unlimited number of fashion shows during the same fashion week, the agencies that represent the models have to discriminate among booking requests from different houses. These agencies are "doing the grading of the fashion houses," with fashion models being the "exchange currency" (Mears, 2011). Thus, as the status of a house gets higher, it is able to book more sought-after models. Operationally, we constructed sociomatrices in which the value of a cell c_{ij} is the number of models shared by fashion houses i and j over two seasons during a calendar year. Annual aggregation is appropriate because modeling agencies develop annual model allocation strategies. Based on each sociomatrix, we computed each fashion house's normalized power centrality in the model-sharing network (Podolny, 1993). High centrality means that the fashion house gets to share sought-after models with other houses that use sought-after models, which is consistent with the industry's conception of status. This measure has high face validity: the houses with top scores include such high-status brands as Alexander McQueen, Chanel, Christian Dior, Dolce & Gabbana, Fendi, etc.

The resulting status measure was used to construct the rank order of the fashion houses for every year. Then we identified the high-, medium-, and low-status groups in the fashion industry by computing scores corresponding the 33rd and 66th percentiles of status in a given year. It was important to empirically identify status groups because these tend to be relatively stable communities of houses and the industry stakeholders recognize them as such. Next we identified which mobility events corresponded to employee loss to a higher, same, or lower-status group. For instance, between the years 2000 and 2005, a focal fashion house located in the medium-status group might have lost designers to two houses located in the higher-status group, to three fashion houses located in the lower-status group, and to one house located in the

same-status group. Then this house's *Higher-Status Mobility Out-Degree* would be equal to two, its *Same-Status Mobility Out-Degree* equal to one, and its *Lower-Status Mobility Out-Degree* equal to three. Importantly, we determined the relative positions of houses in the status groups based on the status scores in the same year during which mobility events actually occurred. For example, within the 2000–2005 time window, designer mobility in the year 2000 would be evaluated using the status scores computed for the year 2000 and his or her mobility in 2001 evaluated using 2001 status scores.

Control variables

Our models include a range of controls. To begin, we controlled for the absolute value of *House Status*, using the normalized power centrality measure. This helped hold the status level of the house constant in regressions examining mobility across or within status groups.

In order to show that our results are indeed driven by knowledge flows and attention focusing to and from the departed designers, we had to control for an important alternative explanation: results may be driven by the quality of human capital, so that employees leave for different types of new employers (especially employers from different status groups) depending on their talent. While it is very hard to directly observe the quality of individuals in archival research, we fortunately can turn to an indirect proxy, namely, the awards that industry peers give to designers to recognize their talent and achievements. To that end, we collected data on the recipients of major awards: the Council of the Fashion Designers of America (CFDA) Fashion Awards and British Fashion Awards. These are globally renowned awards (e.g., CFDA Awards are often referred to as "the Oscars of Fashion") and, despite the words "America" and "British" in the titles, any foreign designer at any stage of their career can win either (or both) of these awards. For the time period considered, neither Milan- nor Paris-based institutions offer equivalent awards. Even though our dataset covers collections presented from 2000 through 2010, we identified the winners of all of these awards from their inception (i.e., 1984 for the CFDA Award and 1989 for the British Fashion Award). Individuals who won these awards are considered to be star designers—i.e., professionals whose career mobility could entail a significant

transfer of human capital and, thus, act as an alternative explanation for our relationships.

We used the information on these awards to compute several variables. One variable is labeled *Number of Hired Stars* and is a count of how many award-winning designers a fashion house hired in the same time window on the basis of which our mobility out-degree measures were computed. We also computed a variable labeled *Number of Lost Stars,* a count of how many award-winning designers a fashion house lost in the same window. Since the loss (or hire) of a star might be particularly felt right after the event, we computed indicator variables *Recent Star Loss* and *Recent Star Hire* set to one if the house lost or hired at least one star designer within the 12 months preceding the fashion show that the buyers were asked to evaluate. We also controlled for the availability of talent inside the fashion houses. To that end, we computed a variable *Star Creative Director* that captured how many award-winning creative directors were responsible for the focal collection. We also constructed a variable called *House's Number of Awards* that reflected the total number of awards designers earned while working for the focal house as opposed to this house's "acquisition" of awards by hiring stars. *House's Number of Awards* controls for the extent to which a house is a hotbed of talent—i.e., has unique management practices that allow it to develop talent, as opposed to hiring talent from the outside.

The payoffs to designer mobility can also be affected by the existence of a company's former employees both in the industry in general and in the houses to which it lost employees in particular. To capture whether there is an alumni network in the specific destination houses or, alternatively, in the industry as a whole, we have constructed two dummies: *Alumni Network in Destination House* and *Alumni Network in Industry*. The first was set to one if a house has lost employees to at least one competing house that had already hired its employees in the past (e.g., Tom Ford moves to Gucci from Perry Ellis and then another designer moves from Perry Ellis to Gucci) and the second variable was set to one if there was at least one former employee of the focal fashion house working in any other fashion house (e.g., Tom Ford moves to Gucci from Perry Ellis and then another designer moves from Perry Ellis to Chanel).

France and Italy are two key countries in the global fashion industry (Godart, 2012). When someone moves to work in any French house, this person may be expected to learn from the best industry experts on how to *design* fashion items. When someone moves to work in Italy, this person can be expected to learn from the experts on how to actually manufacture fashion items. No other countries in the world have such stature. Thus, we controlled for how many individuals have left the focal fashion house to work for competitors in these two countries, which gave us two variables, *Designers Lost to Italian Houses* and *Designers Lost to French Houses*.

We also controlled for the amount of *Media Coverage* of the focal fashion house by computing the log of the unity plus the total number of articles covered by Factiva about each house for the time period preceding a fashion season. This variable was a proxy for stakeholders' attention to the focal fashion house (Godart and Mears, 2009). We controlled for the house's age by computing how many years had elapsed from its founding (variable *House Age*).

Additionally, we computed variables associated with creative directors who were responsible for the collections evaluated by buyers: directors' age (*Age of Creative Director*), length of director's tenure at the current fashion house (*Creative Director's Tenure*), the number of different fashion houses this person worked at (*Creative Director's Number of Houses*), and whether the director's position involved working with other creative directors (*Team of Creative Directors*). We also counted the logged value of the total number of designers working in the fashion house, including the designer assistants (this variable was labeled *Number of Designers*). We also computed an indicator variable *Creative Director's Fashion Education* coded as one if creative directors had studied fashion in school. When variables (like *Age*, *Tenure,* or *Fashion Education*) captured teams of creative directors, we took the average of relevant characteristics.

Just like the fashion houses have outward centrality in the mobility network from losing employees, they also have inward centrality in the mobility network through hiring employees from competitors in the same or different countries as well as in the same or different status strata. Using similar heuristics as in computing outward centrality, we computed *Domestic Mobility In-Degree, Foreign Mobility In-Degree, Same-Status Mobility In-Degree, Higher-Status Mobility In-Degree* and

Lower-Status Mobility In-Degree. We also included season and country fixed effects.

Analytical approach

Despite including these control variables, our analyses may still be affected by endogeneity due to omitted variable bias or reverse causality affecting our mobility in-/out-degree measures. For example, individuals from different companies might be drawn to join the focal house if its creative director is known to be easy to work with. Having such a director at the helm of a house can also increase creative performance because people surrounding this person are more creative. The absence of an "easy/hard to work with" variable or other unobservables linked to the personality of the current creative director that correlate both with personnel mobility variables and creative performance in the models could inflate the standard errors for our theoretical variables or alter the signs of these variables' coefficients. Reverse causality may also be at play: when a firm performs well, its employees are likely to be in demand by higher-status competitors; yet when a firm performs poorly, it may lay off some of its employees, who will most likely end up with lower-status competitors. Ordinary least squares (OLS) estimation is likely to provide biased results in our context.

A typical approach to control for endogeneity is to conduct two-stage regression analyses whereby one instruments an endogenous regressor with variables that affect the dependent variable's error term only through the instrumental variable's effect on the endogenous regressor. The problem is that we have multiple potentially endogenous regressors (i.e., each of the mobility out- and in-degrees). The only framework that realistically allows us to instrument this high number of variables at the same time is the Arellano-Bover/Blundell-Bond (AB/BB) two-step system generalized method of moments (GMM) estimator (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998).

ANALYSIS AND RESULTS

Table 1 reports descriptive statistics and correlation coefficients for our variables. Our initial sample contained 2,427 house-season observations, but due to the need to accommodate lags of the variables

which we needed to instrument, we performed our regressions on the remaining sample of 2,023 observations. Table 2 contains our regression results.

Using the Arellano-Bond family of estimators requires that the model's error terms be first-order serially correlated (as evidenced by the significance of the AR(1) test), yet not second-order correlated (as evidenced by the lack of significance for the AR(2) test). In addition, a nonsignificant Hansen test (as well as difference-in-Hansen test) of overidentifying restrictions is required to further suggest that the specific lagged values are valid instruments (Milanov and Shepherd, 2013; Suarez, Cusumano, and Kahl, 2013) and that the chosen lag structure is appropriate (Roodman, 2009). In each model, we report tests for serial correlation—AR(1) and AR(2), the model's overall Hansen test to evaluate joint validity of the full instrument set,[3] difference-in-Hansen tests to evaluate the quality of variables' lags as instruments for the levels equation in the system GMM, as well as the difference-in-Hansen tests to evaluate the quality of the lags of dependent variable as instruments. Robust standard errors (Windmeijer, 2005) are reported for each model. These are needed in this context to accommodate the fact that while a two-step estimator is more efficient than a one-step estimator, the former produces artificially low standard errors. We also report the number of instruments as well as the number of panels (i.e., fashion houses).

Our baseline is Model 1 that only includes controls. We introduce a linear and quadratic term of *Foreign Mobility Out-Degree* in Model 2. The positive coefficient on the linear term ($\beta = 0.40$, SE $= 0.16$, $p = 0.01$, CI[4] [0.09; 0.72]) and negative coefficient on the squared term ($\beta = -0.06$, SE $= 0.02$, p $= 0.01$, CI [-0.10; -0.01])

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[3] In AB/BB estimation, the number of instruments is influenced by the number of lags of the endogenous variables, the lagged values used to instrument the lagged dependent variable, as well as the exogenous control variables. The appropriate lag structure can vary for each model; the best one results in the significant AR(1) test, not significant AR(2) test, not significant overall Hansen tests, as well as not significant difference-in-Hansen tests for the subsets of instruments based on the lagged dependent variable and that based on other lags (Milanov *et al.,* 2013; Suarez *et al.,* 2013). At the same time, Hansen tests cannot have the perfect values of $p = 1$, which is an indication that the model may have too many instruments to be capable of expunging endogeneity, nor should the test values be substantially less than 0.25, which indicates a high risk of instrumental variables correlating with the dependent variable's error term (Roodman, 2009).

[4] We report 95 percent confidence intervals (CIs) in this article.

Table 1. Descriptive statistics and correlations

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Creative Performance	1.00														
2	Alumni Network in Industry	0.24	1.00													
3	Star Creative Director	0.17	0.38	1.00												
4	Alumni Network in Destination House	0.05	0.21	0.10	1.00											
5	Designers Lost to French Houses	0.25	0.44	0.21	0.29	1.00										
6	Designers Lost to Italian Houses	0.13	0.34	0.18	0.42	0.20	1.00									
7	House's Number of Awards	0.21	0.23	0.45	−0.03	0.18	0.14	1.00								
8	House Age	0.20	0.39	0.20	0.09	0.33	0.15	−0.06	1.00							
9	Recent Star Hire	0.02	0.04	0.30	0.03	0.04	0.02	0.11	0.04	1.00						
10	Recent Star Loss	−0.02	0.03	−0.06	−0.03	0.06	−0.02	0.00	−0.01	−0.03	1.00					
11	Number of Lost Stars	0.24	0.33	0.36	0.27	0.43	0.37	0.14	0.23	0.02	0.03	1.00				
12	Number of Hired Stars	0.06	0.30	0.43	0.12	0.29	0.19	0.10	0.21	0.05	0.03	0.41	1.00			
13	Media Coverage (log)	0.42	0.48	0.38	0.14	0.36	0.24	0.30	0.45	0.08	0.00	0.28	0.22	1.00		
14	House Status	0.33	0.32	0.31	0.03	0.26	0.14	0.25	0.38	0.06	−0.03	0.22	0.26	0.61	1.00	
15	Age of Creative Director	0.08	0.24	0.26	0.13	0.07	0.15	0.02	0.25	−0.04	−0.11	0.12	0.13	0.38	0.26	1.00
16	Tenure of Creative Director	0.16	0.10	0.21	0.12	0.04	0.22	0.10	0.12	−0.06	−0.18	0.18	−0.06	0.27	0.15	0.72
17	Creative Director's Number of Houses	0.13	0.28	0.27	0.20	0.33	0.30	0.10	0.32	−0.01	0.03	0.38	0.35	0.32	0.36	0.27
18	Team of Creative Directors	−0.10	0.04	−0.02	0.01	−0.01	−0.03	0.01	0.00	0.04	0.00	−0.09	−0.09	−0.04	−0.01	−0.07
19	Creative Director's Fashion Education	0.09	−0.03	0.06	−0.10	0.00	−0.07	0.09	−0.08	0.04	0.05	0.05	0.04	−0.06	−0.01	−0.37
20	Number of Designers (log)	0.11	0.38	0.25	0.17	0.35	0.27	0.22	0.22	0.08	−0.01	0.18	0.09	0.29	0.14	0.07
21	Domestic Mobility In-Degree	0.00	0.28	0.22	0.03	0.25	0.14	0.14	0.15	0.02	0.08	0.03	0.39	0.20	0.15	0.10
22	Foreign Mobility In-Degree	0.11	0.40	0.20	0.06	0.49	0.29	0.21	0.27	0.09	0.11	0.27	0.36	0.23	0.23	−0.10
23	Higher-Status Mobility In-Degree	−0.07	0.05	0.12	−0.03	0.11	−0.02	0.15	−0.10	0.09	0.13	0.03	0.19	0.07	0.15	−0.07
24	Same-Status Mobility In-Degree	0.01	0.22	0.11	−0.03	0.29	0.03	0.11	0.13	−0.01	0.15	0.06	0.35	0.13	0.14	0.00
25	Lower-Status Mobility In-Degree	0.10	0.38	0.21	0.00	0.33	0.19	0.05	0.29	0.16	0.08	0.25	0.31	0.33	0.31	−0.01
26	Foreign Mobility Out-Degree	0.26	0.53	0.26	0.19	0.64	0.46	0.31	0.25	0.07	0.06	0.39	0.35	0.33	0.26	0.01
27	Domestic Mobility Out-Degree	0.24	0.52	0.39	0.28	0.46	0.41	0.30	0.24	−0.02	−0.02	0.46	0.24	0.42	0.25	0.31
28	Higher-Status Mobility Out-Degree	0.06	0.27	0.10	−0.05	0.39	0.17	0.16	0.06	0.05	0.07	0.09	0.13	0.25	0.12	−0.01
29	Same-Status Mobility Out-Degree	0.09	0.44	0.18	0.12	0.43	0.15	0.17	0.20	−0.01	0.05	0.34	0.21	0.23	0.15	0.09
30	Lower-Status Mobility Out-Degree	0.25	0.40	0.34	0.11	0.35	0.26	0.24	0.25	0.07	0.04	0.40	0.36	0.42	0.39	0.10
	Mean	1.24	0.40	0.35	0.03	0.65	0.62	0.67	26.72	0.03	0.03	0.18	0.17	4.40	13.17	43.32
	S.D.	2.39	0.49	0.50	0.18	0.65	0.62	0.67	30.94	0.18	0.17	0.49	0.44	1.42	8.82	11.67
	Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	22.00
	Max	12.57	1.00	2.00	1.00	3.00	4.00	5.00	172.00	1.00	1.00	4.00	2.00	7.98	50.34	79.00

Table 1. continued

Variable	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
16	*Tenure of Creative Director*	1.00														
17	*Creative Director's Number of Houses*	0.10	1.00													
18	*Team of Creative Directors*	-0.11	-0.16	1.00												
19	*Creative Director's Fashion Education*	-0.22	0.04	-0.03	1.00											
20	*Number of Designers (log)*	0.04	0.03	0.46	0.00	1.00										
21	*Domestic Mobility In-Degree*	-0.12	0.22	0.05	0.03	0.28	1.00									
22	*Foreign Mobility In-Degree*	-0.18	0.29	0.00	0.11	0.32	0.10	1.00								
23	*Higher-Status Mobility In-Degree*	-0.13	0.17	0.00	0.10	0.02	0.18	0.32	1.00							
24	*Same-Status Mobility In-Degree*	-0.25	0.21	0.03	0.04	0.14	0.45	0.46	0.09	1.00						
25	*Lower-Status Mobility In-Degree*	-0.09	0.15	0.09	0.12	0.30	0.14	0.62	0.09	0.24	1.00					
26	*Foreign Mobility Out-Degree*	-0.03	0.27	0.00	0.09	0.36	0.20	0.72	0.12	0.36	0.49	1.00				
27	*Domestic Mobility Out-Degree*	0.34	0.29	-0.03	0.02	0.30	0.33	0.21	0.06	0.09	0.23	0.31	1.00			
28	*Higher-Status Mobility Out-Degree*	-0.03	0.09	-0.04	0.03	0.13	0.10	0.43	0.31	0.32	0.27	0.46	0.19	1.00		
29	*Same-Status Mobility Out-Degree*	0.05	0.24	-0.01	0.02	0.13	0.11	0.36	0.06	0.40	0.23	0.48	0.34	0.19	1.00	
30	*Lower-Status Mobility Out-Degree*	0.09	0.23	-0.02	0.09	0.26	0.15	0.41	0.09	0.17	0.59	0.53	0.46	0.22	0.20	1
	Mean	11.27	3.03	0.20	0.65	0.88	0.50	0.63	0.17	0.39	0.20	0.64	0.47	0.13	0.26	0.33
	St. Dev.	9.91	2.16	0.40	0.46	0.27	0.86	1.14	0.47	0.78	0.60	1.17	0.89	0.41	0.57	0.84
	Min	0.00	1.00	0.00	0.00	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Max	53.00	13.00	1.00	1.00	2.08	7.00	6.00	3.00	7.00	5.00	7.00	7.00	3.00	4.00	6.00

Table 2.   Regression results

	Model 1 coef	Model 1 SE	Model 2 coef	Model 2 SE	Model 3 coef	Model 3 SE	Model 4 coef	Model 4 SE	Model 5 coef	Model 5 SE	Model 6 coef	Model 6 SE	Model 7 coef	Model 7 SE	Model 8 coef	Model 8 SE	Model 9 coef	Model 9 SE
Season Fixed Effects	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Country Fixed Effects	Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes		Yes	
Lagged Dependent Variable (Creative Performance)	1.05	(0.12)	0.96	(0.08)	1.08	(0.10)	0.94	(0.10)	0.94	(0.10)	1.02	(0.10)	0.96	(0.10)	0.87	(0.08)		
House Status	−0.01	(0.01)	−0.00	(0.01)	0.02	(0.02)	−0.01	(0.02)	0.00	(0.02)	−0.01	(0.02)	−0.01	(0.01)			0.01	(0.01)
Number of Hired Stars	0.18	(0.14)	0.02	(0.10)	0.16	(0.16)	−0.02	(0.18)	−0.00	(0.17)	0.13	(0.16)	0.06	(0.13)			−0.21	(0.27)
Number of Lost Stars	−0.15	(0.12)	−0.11	(0.08)	0.02	(0.12)	0.06	(0.18)	0.06	(0.17)	0.12	(0.15)	0.09	(0.11)			−0.66	(0.33)
Recent Star Loss	0.35	(0.16)	0.23	(0.11)	0.02	(0.15)	0.07	(0.17)	0.02	(0.14)	−0.14	(0.20)	−0.15	(0.14)			0.04	(0.17)
Recent Star Hire	0.35	(0.19)	0.09	(0.12)	0.34	(0.16)	0.11	(0.14)	0.14	(0.14)	0.08	(0.13)	0.12	(0.14)			−0.35	(0.28)
Star Creative Director	−0.38	(0.23)	−0.14	(0.12)	−0.58	(0.20)	−0.15	(0.20)	−0.29	(0.24)	−0.26	(0.14)	−0.24	(0.13)	−0.06	(0.19)	0.50	(0.31)
House's Number of Awards	−0.11	(0.20)	0.08	(0.15)	−0.25	(0.25)	−0.05	(0.18)	−0.08	(0.16)	−0.22	(0.21)	−0.15	(0.19)			0.17	(0.20)
Alumni Network in Destination House	0.41	(0.20)	0.43	(0.26)	0.09	(0.26)	0.09	(0.35)	0.03	(0.31)	−0.08	(0.33)	−0.18	(0.28)			0.01	(0.46)
Alumni Network in Industry	−0.16	(0.24)	−0.11	(0.16)	−0.81	(0.23)	−0.29	(0.27)	−0.38	(0.31)	−0.55	(0.30)	−0.30	(0.20)			0.20	(0.26)
Designers Lost to Italian Houses	−0.25	(0.09)	−0.27	(0.10)	−0.12	(0.16)	−0.14	(0.21)	−0.16	(0.16)	−0.04	(0.19)	0.10	(0.13)			−0.56	(0.28)
Designers Lost to French Houses	−0.29	(0.10)	−0.29	(0.14)	−0.21	(0.21)	−0.17	(0.29)	−0.13	(0.25)	0.02	(0.25)	0.14	(0.16)			−0.66	(0.18)
Media Coverage (log)	0.07	(0.12)	−0.07	(0.11)	0.19	(0.24)	0.02	(0.12)	0.04	(0.15)	0.07	(0.14)	0.15	(0.12)			0.33	(0.13)
House Age	0.01	(0.01)	0.01	(0.01)	−0.01	(0.01)	−0.00	(0.01)	0.00	(0.01)	−0.01	(0.01)	−0.01	(0.01)			−0.01	(0.00)
Age of Creative Director	−0.02	(0.02)	−0.02	(0.01)	0.04	(0.02)	−0.01	(0.03)	−0.01	(0.03)	0.01	(0.02)	0.01	(0.02)			0.00	(0.02)
Tenure of Creative Director	0.05	(0.02)	0.05	(0.02)	−0.05	(0.02)	0.00	(0.03)	0.00	(0.03)	−0.02	(0.03)	−0.03	(0.02)			0.00	(0.02)
Creative Director's Number of Houses	0.01	(0.03)	−0.00	(0.03)	−0.02	(0.03)	−0.02	(0.03)	−0.03	(0.03)	−0.02	(0.03)	−0.04	(0.02)	−0.01	(0.08)	0.14	(0.11)
Team of Creative Directors	−0.58	(0.28)	−0.29	(0.21)	0.13	(0.34)	0.05	(0.29)	−0.03	(0.24)	0.27	(0.29)	0.12	(0.20)			0.05	(0.20)
Number of Designers (log)	−0.25	(0.39)	−0.47	(0.31)	0.76	(0.50)	−0.35	(0.51)	−0.21	(0.58)	−0.13	(0.47)	0.02	(0.28)			0.52	(0.37)
Creative Director's Fashion Education	−0.49	(0.44)	−0.31	(0.39)	0.97	(0.79)	0.07	(0.84)	0.15	(0.88)	0.32	(0.54)	0.42	(0.33)			0.04	(0.37)
Domestic Mobility In-Degree	0.15	(0.08)	0.10	(0.07)	0.24	(0.11)	0.19	(0.13)	0.17	(0.14)	0.29	(0.10)	0.20	(0.10)	−0.02	(0.06)	−0.31	(0.15)
Foreign Mobility In-Degree	0.40	(0.20)	0.14	(0.09)	0.06	(0.19)	0.16	(0.15)	0.07	(0.20)	0.32	(0.19)	0.24	(0.13)	0.01	(0.09)	−0.53	(0.22)
Higher-Status Mobility In-Degree	−0.42	(0.26)	−0.04	(0.15)	−0.49	(0.24)	−0.08	(0.23)	−0.01	(0.25)	−0.18	(0.24)	0.02	(0.19)			0.36	(0.15)
Same-Status Mobility In-Degree	−0.11	(0.11)	0.01	(0.09)	−0.30	(0.09)	−0.07	(0.11)	−0.06	(0.14)	−0.31	(0.18)	−0.19	(0.11)	0.00	(0.10)	0.49	(0.19)
Lower-Status Mobility In-Degree	−0.06	(0.11)	0.10	(0.09)	−0.10	(0.12)	−0.07	(0.15)	−0.05	(0.13)	−0.25	(0.18)	−0.32	(0.15)	−0.03	(0.10)	0.49	(0.15)

Table 2. continued

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7		Model 8		Model 9	
	coef	SE	coef	SE	coef	SE	coef	SE	coef	SE	coef	SE	coef	SE	coef	SE	coef	SE
Foreign Mobility Out-Degree			0.40	(0.16)	0.55	(0.15)	0.58	(0.26)	0.66	(0.28)	0.57	(0.24)	0.40	(0.18)	0.32	(0.16)	0.61	(0.21)
Foreign Mobility Out-Degree (Squared)			−0.06	(0.02)	−0.09	(0.03)	−0.08	(0.04)	−0.08	(0.04)	−0.09	(0.03)	−0.08	(0.03)	−0.06	(0.03)	−0.03	(0.03)
Domestic Mobility Out-Degree					0.40	(0.30)	0.18	(0.24)	0.24	(0.19)	0.12	(0.20)	0.02	(0.13)	0.10	(0.10)	0.30	(0.14)
Domestic Mobility Out-Degree (Squared)					−0.05	(0.05)												
Higher-Status Mobility Out-Degree							−0.70	(0.53)	−0.49	(0.35)	−0.55	(0.33)	−0.57	(0.28)	−0.33	(0.19)	0.00	(0.21)
Higher-Status Mobility Out-Degree (Squared)							0.18	(0.22)										
Same-Status Mobility Out-Degree							−0.37	(0.37)	−0.35	(0.18)	−0.22	(0.16)	−0.23	(0.12)	−0.21	(0.13)	−0.24	(0.19)
Same-Status Mobility Out-Degree (Squared)							0.04	(0.15)										
Lower-Status Mobility Out-Degree											0.06	(0.11)	−0.10	(0.14)	−0.13	(0.13)	−0.44	(0.20)
Lower-Status Mobility Out-Degree (Squared)													0.07	(0.03)	0.06	(0.03)	0.08	(0.06)
Observations	2,023		2,023		2,023		2,023		2,023		2,023		2,023		2,023		2,023	
Number of houses	261		261		261		261		261		261		261		261		261	
Number of instruments	94		106		84		92		85		87		96		80			
AB test for AR(1) in first differences (p-value)	0.00		0.00		0.00		0.00		0.00		0.00		0.00		0.00			
AB test for AR(2) in first differences (p-value)	0.93		0.83		0.99		0.88		0.88		0.75		0.72		0.75			
Overall Hansen test (p-value)	0.84		0.60		0.93		0.91		0.93		0.87		0.90		0.84			
Difference-in-Hansen test for exogeneity of GMM instruments for levels (p-value)	0.50		0.49		0.53		0.50		0.52		0.41		0.41		0.25			
Difference-in-Hansen test for exogeneity of Lagged dependent variable (p-value)	0.83		0.33		0.53		0.74		0.61		0.74		0.58		0.64			

Robust standard errors in parentheses; p-values can be obtained by dividing coefficients by standard errors.

are suggestive of the inverted-U-shaped function we hypothesize (H1). In Model 3, we enter a linear and quadratic term of *Domestic Mobility Out-Degree* for comparison. The positive linear ($\beta = 0.55$, SE = 0.15, $p = 0.00$, CI[0.25; 0.85]) and negative quadratic ($\beta = -0.09$, SE = 0.03, $p = 0.00$, CI[−0.14; −0.04]) terms of *Foreign Mobility Out-Degree* are significant, whereas the effects of *Domestic Mobility Out-Degree* are not significant.

Following Bothner *et al.* (2012), we further wanted to probe whether the relationship between *Foreign Mobility Out-Degree* and *Creative Performance* is indeed inverted-U-shaped or rather characteristic of a "diminishing returns" function whereby the effect is initially positive, then diminishes, yet never turns negative. To this end, we estimated Model 3bis (reported in Table 3) in which we replaced *Foreign Mobility Out-Degree* with dummies that take a value of one for different values of this variable. The reference category is the dummy *Foreign Mobility Out-Degree = 4*, which is the peak of the effect. As Model 3bis illustrates, the dummies below four have negative and mostly significant effects, whereas the dummies above four do not. The results of these intermediary models therefore suggest partial support for Hypothesis 1: the relationship between *Foreign Mobility Out-Degree* and *Creative Performance* seems to be a "diminishing returns" concave function rather than a true inverted-U.

To test Hypotheses 2 and 3, we now return to Table 2 where we enter linear and squared terms of *Higher Status-Mobility Out-Degree* as well as *Same Status-Mobility Out-Degree* in Model 4. In Model 5, we drop the quadratic effects of *Higher Status-Mobility Out-Degree* as well as that of the *Same Status-Mobility Out-Degree* as they are not significant in Model 4. We then add a linear term of *Lower-Status Mobility Out-Degree* in Model 6. As this term is not significant, we experiment with adding a quadratic term for the *Lower-Status Mobility Out-Degree* in Model 7, whose effect turns out to be significant and positive. This suggests support for Hypothesis 3, albeit with a slight twist: *Lower-Status Mobility Out-Degree* seems to have a positive impact on *Creative Performance*, with increasingly positive returns. Interestingly, effects of mobility to higher or same-status competitors both become significant only in Model 7 where we introduce quadratic effects for *Lower-Status Mobility Out-Degree* and both *Higher Status-Mobility Out-Degree* and *Same*

Table 3.   Regression results

	Model 3bis	
Foreign Mobility Out-Degree=0	−1.17	(0.53)
Foreign Mobility Out-Degree=1	−0.68	(0.40)
Foreign Mobility Out-Degree=2	−0.61	(0.32)
Foreign Mobility Out-Degree=3	−0.56	(0.25)
Foreign Mobility Out-Degree=5	0.89	(0.77)
Foreign Mobility Out-Degree>5	−0.49	(0.67)
Controls from Model 3	Yes	
House's country fixed effects	Yes	
Season's fixed effects	Yes	
Number of houses	261	
Number of instruments	133	
AB test for AR(1) in first differences (p-value)	0	
AB test for AR(2) in first differences (p-value)	0.84	
Overall Hansen test (p-value)	0.78	
Difference-in-Hansen test for exogeneity of GMM instruments for levels (p-value)	0.47	
Difference-in-Hansen test for exogeneity of lagged dependent variable (p-value)	0.83	
Observations	2,023	

Robust standard errors in parentheses.

Status-Mobility Out-Degree. This can probably be explained by the fact that models in which we don't properly account for all three kinds of mobility within, as well as across, status boundaries are not properly specified.

Model 7 is our full model. There is evidence that Hypothesis 1 is supported with respect to cross-country mobility: fashion houses benefit from losing designers to competitors from different countries, but this effect satiates at high values of mobility. This is evidenced by the positive linear effect of *Foreign Mobility Out-Degree* ($\beta = 0.40$, SE = 0.18, $p = 0.03$, CI [0.04; 0.75]) and a negative quadratic effect of this variable ($\beta = -0.08$, SE = 0.03, $p = 0.00$, CI[-0.13; -0.03]). We did not observe a significant effect of within-country mobility. Hypothesis 2 is not supported: the full model shows that fashion houses uniformly suffer from losing designers to competitors of higher status (*Higher-Status Mobility Out-Degree* $\beta = -0.57$, SE = 0.28, $p = 0.04$, CI [-1.12; -0.03]). Hypothesis 3 seems to be supported: there is a positive effect of losing designers to many lower-status competitors, and this effect accelerates at an increasing rate as evidenced by the positive and significant term of *Lower-Status Mobility Out-Degree Squared*

($\beta = 0.07$, SE $= 0.03$, $p = 0.05$, CI [0.00; 0.13]). Even though the linear effect of this variable is negative in Model 7 ($\beta = -0.10$, SE $= 0.14$, $p = 0.46$, CI [-0.37; 0.17]), the wide confidence interval suggests that there is no systematic reduction of creative performance when the fashion house starts to lose key employees to lower-status competitors. While we expected no effect of same-status mobility on creative performance, Model 7 shows that this effect is actually negative (*Same-Status Mobility Out-Degree* $\beta = -0.23$, SE $= 0.12$, $p = 0.04$, CI [-0.46; -0.01]).

Online Figure 2 in File S1 plots the effects across the observable range of out-degree on creative performance based on destination of personnel mobility. It is available in Appendix 3 in File S1.

We also examined the economic effects of changes in each variable by examining their impact on the number of creativity points awarded to each house when the variable changed from its mean to two standard deviations above its mean. Such change in the *Foreign Mobility Out-Degree* increases the average number of creativity points awarded by any buyer to the house's collection by 0.27. Given that the average buyer gives 1.24 points to an average collection, 0.27 points represents a 21.5 percent increase in a buyer's evaluation. The same change in the *Higher-Status Mobility Out-Degree* leads to a loss of 0.47 points, which represents a 37.69 percent reduction from the average. The same change in *Same-Status Mobility Out-Degree* leads to a loss of 0.26 points, which represents a 21.15 percent reduction from the average. Finally, a two standard deviation increase in *Lower-Status Mobility Out-Degree* translates into a gain of 0.28 creativity points, which translates to a 22.19 percent increase relative to average number of points.

In Model 8, we dropped nonsignificant controls from Model 7 to see whether they affected our results. This check is helpful because a high number of nonsignificant control variables also means a high number of instruments in a system GMM AB/BB model, which beyond a certain point may prevent the model from expunging endogeneity. The effects are similar to those reported in Model 7.

Finally, in Model 9 we show the results without deploying the AB/BB estimator. This model has firm, country, and season fixed effects implemented using OLS. This model shows biased estimates. From Model 9 one would conclude, for example,

that losing employees to higher-status competitors has a positive (although not significant) effect and that personnel loss to lower-status competitors seems to have a significant negative effect. However, OLS does not allow us to control for reverse causality, among other things. That is, how well a firm performs or is expected to perform creatively may impact its employees' mobility to competitors of different status by affecting how attractive they are to these competitors. If a firm is known to perform well or is expected to do well in the near future, many higher-status competitors may poach its employees. Without accounting for reverse causality, we are likely to observe a positive association between performance and mobility to higher-status competitors, as in Model 9, that hides the true (negative) effect of this type of mobility on the focal firm's performance. The reverse is also true. That is, a firm's poor performance (or expected performance) may both create a need to let go of some employees and limit job opportunities for these employees: those from a poorly performing firm are likely to end up working for lower-status competitors. This is likely to create an artificial negative association between performance and mobility to lower-status competitors, as in Model 9, which hides the true (positive) effect of this type of mobility.

DISCUSSION AND CONCLUSIONS

While we already had evidence that employee mobility builds potentially valuable boundary-spanning ties across organizations long after employees have left, there was little evidence on the conditions under which companies can benefit from employee departures. Available research acknowledged that these departures can potentially offer firms access to external knowledge, yet it had assumed that the knowledge accessed did not depend on the type of boundary spanned by departed employees (Corredoira and Rosenkopf, 2010; Dokko and Rosenkopf, 2010; Godart *et al.*, 2014).

We knew that when employees span formal organizational boundaries, they may provide their former employer with access to external knowledge at the risk of idea leakage to competition. However, considering only formal boundary spanning is not sufficient: the current study suggests that the creative performance of organizations is also affected

by the extent to which employee departures span geographic or status boundaries. By investigating these boundaries, we found that the aggregate relationship of creative performance with outward mobility consists of several linear and nonmonotonic relationships with the number of employees who spanned status or geographic boundaries when leaving their firm. The results show that our focus on geographic and status boundaries is justified by the fact that employee mobility across or within these boundaries differentially affects the balance of costs and benefits of outward mobility for the firm's creative performance.

Even though we originally expected that high employee loss to different foreign competitors would be detrimental to the organization's performance, due to opportunities that foreign competitors have to learn from the firm's former collaborators, our results suggest that this is not the case. Ultimately, even when foreign competitors learn from the focal house's alumni and imitate its practices, the resulting competing products do not undermine the perception of creativity of the products made by the focal fashion house. In other words, following Italian designers' moves to Japan or France, buyers will not downgrade their perceptions of the creativity of Italian fashion collections even when Japanese or French designers incorporate Italian ideas into their respective collections. By contrast, we saw neither positive nor negative effects of employee mobility to domestic competitors: while such mobility did not yield significant benefits as it was not associated with spanning a geographic boundary, there were no significant costs of imitation of the focal firm's products by the same country competitors' either.

The most counterintuitive results came from the analysis of mobility across status groups. Unexpectedly, we found that companies seemed to suffer when their employees move to work for higher-status competitors. Since we controlled for the quality of mobile individuals, these negative effects seem to be driven by the higher-status competitors taking credit for the organization's ideas that are carried by its former employees. We saw similar effects involving the loss of individuals to same-status competitors. Thus, imitation of the organization's ideas by even same-status competitors seems detrimental to its creative performance, as the audience becomes unsure as to which organization these ideas should be attributed to. This means that organizations should do their best to

limit the loss of employees to same or higher-status competitors. At the same time, they probably should not be concerned when their employees move to many lower-status competitors: the benefits from this type of mobility actually increase at an increasing rate as the higher-status organization attracts more attention from the audiences to nonconformist ideas borrowed from lower-status competition.

Our study makes several contributions. First, we enrich the growing literature that examines how social networks resulting from the external boundary-spanning ties of employees affect organizational creativity (Mawdsley and Somaya, 2016). Godart *et al.* (2014) assumed that organizations benefit from the loss of personnel because the resulting bridging ties expose them to diverse knowledge. In this article we explicitly challenge this assumption and show that companies are most likely to benefit from diverse knowledge received from competitors in foreign countries and those of lower status. Unexpectedly, we also find that the benefits of receiving diverse knowledge from competitors of same or higher status are actually lower than the costs. Thus, it is not just the mere diversity of knowledge resulting from outward mobility that matters for the creative performance of organizations, but rather what the sources of this diverse knowledge are (i.e., do the ideas come from domestic or foreign competitors? Do they come from higher- or lower-status competitors?) and whether the costs of access to this diverse knowledge are lower than the benefits. While research has already shown the benefits of individual diversity, our article (and especially Hypothesis 1) suggests that the benefits of exposure to diversity also occur at a different level of aggregation. That is, companies as a whole seem to benefit from the diverse experiences of their departed employees.

Second, we contribute to research on external boundary spanning more generally. These studies can especially benefit from the notion of status boundaries. For example, Rosenkopf and Nerkar (2001) have found that exploration efforts that span organizational boundaries produce more impactful innovations if they also involve spanning technological boundaries. Furthermore, research on technological boundary spanning has demonstrated that geography affects the localization of knowledge (Almeida and Kogut, 1999) and that employee mobility facilitates knowledge flows across geographies (Oettl and Agrawal, 2008). Our findings suggest that in some industries,

the relevant boundaries may not only be based on technology or geography, but also on status. Specifically, membership in status groups can become a source of novel ideas if an organization's employees can span boundaries to lower-status competitors and a source of significant risks if an organization's employees span the boundaries to higher-status competitors.

Third, we contribute to the literature examining the link between foreign experiences and creativity (e.g., Leung and Chiu, 2010; Leung *et al.*, 2008; Maddux and Galinsky, 2009; Tadmor, Galinsky, and Maddux, 2012). This research has demonstrated that individuals become more creative when they are exposed to high requisite variety through contact with foreign cultures and that companies can enhance their creative performance by hiring such individuals (Godart *et al.*, 2015). The current study shows that the foreign experience of employees may become an organization-level resource and can also help their *former* as opposed to *current* employers. This is important for organizations because they can be exposed to requisite variety as a result of their former employees' moving abroad. To benefit from such forms of variety, organizations may benefit from instituting programs that allow alumni who leave to work abroad to stay in touch with the organization's current employees and feed insights back into their creative processes. However, our findings also suggest that organizations do not need to stay in touch with *all* departed employees; for instance, those who went to work for competitors in the same country are unlikely to expose an organization's current employees to significantly novel ideas. This finding confirms the arguments advanced in earlier work on requisite variety: professional mobility within the same country is not beneficial to one's creativity (e.g., Leung *et al.*, 2008; Maddux and Galinsky, 2009; Tadmor *et al.*, 2012).

The buyers who evaluated collections had a low variance in their assessments, as evidenced by a high Cronbach's alpha. As they responded to the question, it is highly probable that they evaluated the collections through the prisms of novelty ("Does the collection contain novel combinations?") and usefulness ("Will it inspire commercially successful collections?"). The high level of agreement about what is novel and useful can be attributed to the fact that the world of high fashion focuses on just a handful of trends that change regularly, with each season. Trends are seen by all market participants, including designers and buyers. For example, gothic elements in fashion were highly popular following the success of the 1999 movie *The Matrix*, yet they became relatively less popular afterwards. This has consequences for the generalizability of this measure to other contexts. For example, we do not believe that creative performance in the hard sciences (e.g., physics, chemistry) is so massively focused on just a handful of trends. Yet the evaluation of novelty in science could also be affected by the competition between some evaluators and authors of ideas. For example, Boudreau *et al.* (2016) find that scientists tend to discount the novelty of ideas when these ideas are close to their domain of expertise. In our case, buyers do not compete with designers for ideas. This arguably makes the buyers' evaluations of novelty and usefulness more impartial than the evaluations of scientific ideas by scientists working in the same domain. This too could be a source of the high inter-rater reliability of our creativity scores. Ultimately, the more a particular field is subject to fads that lead most of the field members to reward a particular combination of creative elements, and the lower the noise associated with some evaluators' competing for novelty with those producers whose work they are supposed to evaluate, the more the creativity evaluations in that field are likely to exhibit high inter-rater reliability similar to that reflected in our dependent variable.

If supported by further research, our study has an important practical implication. Even though companies cannot control where their employees go, they can decide when to make efforts to retain employees, and with whom to keep in touch when they do leave. Our results suggest that companies should not be overly concerned when some of their employees leave for foreign or lower-status competitors; such mobility may help the company access external ideas and may come at little cost. However, companies should help their remaining employees stay in touch with these former coworkers in order to get the maximum benefit from employee mobility. Our results also suggest that companies should make efforts to keep employees from moving to higher- or same-status competitors. Specifically, fashion houses can offer more artistic freedom to designers who have offers from higher- or same-status competitors. Some houses go as far as allowing these designers to establish their own labels within the focal house.

Several boundary conditions apply to our theory. First, our arguments should apply in industries that generate creative output—i.e., products or services

that require recombination of diverse ideas. Second, another assumption is that departed employees stay in touch with their former colleagues and pay attention to their activities in their new place of employment. This is likely to be true when an industry is characterized by important communities of practice, so that professionals consider themselves part of a broad professional community that goes beyond their own organizations. Belonging to a professional community tends to make individuals behave as though their work for companies is not a "zero-sum game"; they expect to create more novel ideas for their companies by sharing insights with colleagues working for competitors. A context where our arguments would probably not apply is the mobility of athletes. For instance, Grohsjean *et al.* (2016: 394) find that NHL players who change teams "experience a conflict in their collective identity as they identify with both [teams] but can only increase the welfare of one." In that context, the victory of one team can only happen at the expense of another team; hence it is a zero-sum game, which we would not observe in fashion. Finally, our theory applies to industries where status groups and country boundaries generate a heterogeneity of business-relevant ideas across firms. Yet, our more general argument—that the effect of key employee mobility depends on whether the employees cross boundaries that expose them to new ideas—should apply regardless of the specific boundary type.

In conclusion, our findings suggest the central role played by national borders and status groups as delimiters of knowledge among different communities of practice in creative industries. National borders and status groups are examples of boundaries that mobile employees could span. If confirmed by future research, such boundaries may influence the ability of organizations to extract creative performance from external boundary-spanning ties that emerge through the career mobility of their employees across these communities. By examining the variations in costs and benefits of employee outward mobility that involves crossing status or geographic boundaries, we offer a new theoretical lens that should help organizations manage personnel loss in a positive manner.

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