Organization Science

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Abstract. Extant theory suggests that candidates with an unfocused identity—those spanning different categories—suffer from a valuation penalty because evaluators are confused by their profile and concerned they lack the required skills. We argue that unfocused candidates may be penalized for another reason; they threaten established social boundaries. This happens in contexts where evaluators act as gatekeepers for social entities, such as professions. We test how the penalty applied to unfocused candidates varies in an academic accreditation process, a setting where evaluators decide on admitting candidates to an academic discipline and where candidates' prior performance is observable. We find using data on the 2012 national scientific qualification in Italian academia that the valuation penalty applied to unfocused (multidisciplinary) candidates was most pronounced for the most high-performing candidates. High-performing yet ill-fitting candidates threaten the distinctiveness and knowledge domain of the discipline and are hence penalized by evaluators. High-performing multidisciplinary candidates suffered the greatest penalty in small and distinctive academic disciplines and when accreditors were highly typical members of their discipline. Our theory and findings suggest that the categorical imperative may be driven not only by cognitive or capability considerations as typically argued in the literature but also, by attempts to maintain social boundaries.

Introduction

A large body of research in organization research and sociology documents the valuation penalty incurred by social actors spanning different social categories. According to the dominant theory, evaluators use candidates' identity, or correspondence with a category, as a proxy for ability and commitment when these characteristics are not observable or are costly to discover. Actors failing to present a focused identity are penalized in evaluation processes because evaluators have a hard time appraising their abilities and have concerns about their unobservable quality[1] (Hsu et al. 2011, Negro and Leung 2013, Leung and Sharkey 2014).

In this paper, we offer and test an alternative theoretical mechanism—boundary maintenance—to explain the valuation penalty incurred by actors with an unfocused identity, notably in professional evaluation settings. We build on work on social closure and the sociology of professions that documents how access to social entities, such as professions, is regulated by incumbents (Weber 1968, Weeden 2002) and how actors violating the boundary of an entity are regarded as a threat to the distinctiveness and knowledge domain of the entity (Abbott 1981, p. 824). Boundary concerns only manifest themselves under specific conditions: when the evaluation process grants access to a closed social entity (such as a discipline) and evaluators act as gatekeepers (Coffee 2006, Cattani et al. 2014). Beyond filtering out candidates with insufficient capabilities, gatekeepers are tasked with maintaining the boundaries of the social entity they represent (Coslor et al. 2020). In this view, social entities need continuous boundary maintenance, lest centrifugal forces dilute their distinct identity and knowledge domain, undermining their appeal to internal members as well as their legitimacy with external members (Abbott 1995, Lamont and Molnar 2002, Montgomery and Oliver 2007, Grodal 2018).

We explore this theoretical mechanism by investigating a case of accreditation, a type of social valuation that confers membership in a social entity like a profession or an academic discipline (Collins 1979, Graffin and Ward 2010). Accreditation decisions are highly consequential because once admitted, candidates enjoy membership and have access to critical resources, both symbolic (e.g., status) and material (e.g., permission to practice a profession) (Boiral 2003). Critically, accreditation affects the reproduction and evolution of social entities over time by determining who gets admitted and who does not.

We investigate how the valuation penalty incurred by actors with an unfocused identity varies when evidence about their prior performance is available to evaluators, as happens in accreditation contests. According to prevailing theory, having information about the prior performance of candidates should make it easier for evaluators to appraise them and assuage concerns about their unobservable abilities. Consequently, the penalty for being unfocused should be less pronounced for candidates with a stronger performance record compared with lower-performing unfocused candidates (everything else being equal). When evaluators act as gatekeepers engaged in boundary maintenance, however, the opposite happens; higher-performing unfocused candidates are penalized more compared with lower-performing unfocused candidates. This is, we argue, because high-performing yet unfocused candidates pose a threat to the social entity to which accreditation opens the door; high performers are more visible and command resources that, once admitted, they may deploy to enact change in the social entity and alter its identity and knowledge domain. When boundary maintenance operates, unfocused candidates face a higher bar when they have a strong track record.

Empirically, we study the scientific qualification in Italian academia, a nationwide habilitation scheme used to accredit candidates as appointable as associate or full professors at any Italian university. The scheme solicited applications from candidates who were evaluated by discipline-specific panels composed of senior academics. Our data set contains information on accreditation decisions on 55,497 resumes made by 174 discipline-specific panels. Confirming prior studies, we find that discipline-focused academics are generally more likely to be accredited than multidisciplinary (unfocused) candidates. However, contrary to prior theory, the penalty for being unfocused is particularly pronounced for high-performing candidates. In support of the boundary maintenance mechanism, we postulate and find evidence that high-performing unfocused actors incur a greater valuation penalty in small and distinctive academic disciplines (i.e., with narrower social identities and knowledge domains) and when accreditors themselves are highly typical of the discipline.

Our findings change the way we think about the categorical imperative in social valuation by highlighting an alternative mechanism—boundary maintenance—that explains the penalty incurred by actors with an unfocused identity. We expect boundary maintenance to be at work in many organizational valuation processes, including hiring and organizational accreditation processes. Yet, the mechanism is not universal; although prevailing theory suggests that unfocused actors may suffer from a greater evaluation penalty in settings in which abilities are difficult or costly to observe, the boundary maintenance mechanism suggests that the valuation penalty may also vary depending on the pressure for boundary maintenance exerted on the evaluators. When evaluators are unconcerned with the identity and knowledge domain of the social entity to which the evaluation gives access (e.g., in more transactional situations), boundary maintenance does not operate. In other cases, including the one we study, candidates may be discounted for being unfocused even when their abilities are observable—because boundary maintenance is paramount to the relevant social entities. The theory has implications for the management of accreditation processes in organizations by shedding light on instances in which collective progress is hindered because accreditors favor boundary maintenance at the expense of perceived quality when evaluating candidates.

The Social Valuation of Unfocused Candidates
Prior Research on Why Unfocused Identities are Penalized

A broad body of work in sociology, labor economics, and management documents the advantages social actors derive from a focused identity (e.g., conforming with a category) (Zuckerman 1999). Unfocused individuals—those spanning different established categories—have been found to be penalized in contexts as diverse as government services (Ferguson and Hasan 2013), online-sourced freelancing services (Leung 2014), and Hollywood feature film production (Zuckerman et al. 2003).

One set of explanations of the benefits accruing to focused actors centers on producer-side advantages. According to the principle of allocation, generalists are less efficient at serving requirements because they spread their capabilities too thinly (Hannan and Freeman 1989). Specialists are better at what they do because a lack of focus hinders learning and poses operational challenges (Neal 1995, Hsu 2006, Hsu et al. 2009). A second set of explanations emphasizes audience perceptions. Extant research converges on the view that even after accounting for the producer-side advantages of a focused identity, audience-side (perception) effects are still present (Hsu et al. 2009, Leung and Sharkey

2014). Scholars have emphasized two primary reasons for why audiences may penalize unfocused candidates. A set of studies suggests that audiences find candidates with an unfocused identity confusing and hence, discount them or pay less attention to them. As evaluators struggle to make sense of unfocused objects, they may experience negative emotional reactions because ambiguous objects are processed less fluently in routine evaluation than more typical objects (Hannan et al. 2019). Researchers have also pointed out that evaluators may perceive candidates with an unfocused identity as qualitatively inferior (Zuckerman 2017). A large body of work suggests that evaluators view focused candidates as more able and more committed, independently of their actual abilities (Negro et al. 2009, Leung and Sharkey 2014, Kacperczyk and Younkin 2017, Zuckerman 2017). This perception is partly informed by the fact that highly-skilled actors tend to be more focused in the first place (Neal 1995). In this view, evaluators equate lack of identity focus with a lack of suitability of a candidate to "do the job" (Zuckerman 2017, p. 47). Identity focus serves as a shortcut that allows evaluators to discover the abilities of candidates, as the lack of focus is interpreted as lack of quality. This conjecture receives support from research suggesting that once the capability of candidates is not in doubt, unfocused identities are no longer penalized and may even be preferred. Zuckerman et al. (2003, p. 1067) show that the penalty for unfocused profiles is much more pronounced for novice actors compared with veterans because audiences are less uncertain about veterans' skills, whereas an unfocused novice may be seen as "dilettante who is not competent at any type of work."

In sum, extant research holds that evaluators are confused by unfocused candidates or expect them to be less proficient, explaining why they tend to discount such candidates. These explanations can be summarized as the *quality discovery* view under the assumption that the purpose of an evaluation is to find candidates who have the abilities to do a job (Zuckerman 2017). This applies even when evaluators favor more focused candidates because they are confused and therefore, stay away from unfocused candidates as it appears too risky to choose them, or it may take simply too much cognitive effort to judge their abilities.

Although these theoretical explanations are compelling, their underlying assumptions may not always hold. In professional evaluation processes, evaluators often are obliged to give each candidate due consideration. This makes it less likely that candidates are discounted because of confusion compared with situations where audiences consider objects (such a products) or persons in routine, everyday situations (Hannan et al. 2019). Moreover, professional evaluations are explicitly designed to assess candidates' fitness for the job, with relevant information made available. When there is little uncertainty over candidate abilities, there is less need to use candidates' identity focus as a shortcut for judging quality. Given these conditions (effortful rather than casual examination, availability of information), one may expect the valuation penalties for unfocused identities to be limited. An alternative mechanism may, however, be at play—boundary maintenance—which we discuss next.

Social Valuation as Boundary Maintenance

Anthropologists and sociologist have long highlighted the critical boundary maintenance role assigned to evaluators in social entities. Boundaries are paramount to the existence and persistence of entities, including disciplines, professions, or political groupings. Social boundaries represent objectified forms of social differences that separate one social entity from another (Lamont and Molnar 2002). Clear boundaries form the basis for the legitimacy of the group as an autonomous entity (Montgomery and Oliver 2007). They are also markers of membership; they facilitate identity formation and maintenance (Hogg and Terry 2000) and delineate distinct knowledge domains (Rao 1998).

Maintaining a social entity means to maintain its boundaries (Abbott 1995). This represents a type of boundary work consisting of efforts to create, expand, reinforce, or remove boundaries affecting social entities (Langley et al. 2019). Maintaining boundaries is challenging as social entities are constantly subject to centrifugal forces (Abbott 2001, Montgomery and Oliver 2007). Particularly strong in early entity formation, centrifugal forces lead to a widening of their domain definition and a larger pool of members. Entities often seek to counter such attempts via centripetal strategies by pulling members to the core and making the distinct social identity of the entity more salient to both insiders and outsiders.

The tension between centrifugal and centripetal forces is particularly acute when decisions need to be made about admitting new members. Social entities, like professions and disciplines, are organized as relatively exclusive groups that operate certain procedures for admitting new members and reproducing themselves over time. The underpinning principle is social closure, the idea that participation of outsiders in a group is limited or subject to conditions (Weber 1968, p. 43). Outsiders may be defined as inferior on the basis of social background, religion, or competence. Closure may be motivated by the attempt to uphold certain quality standards, often combined with the intent to reduce competition to enhance the economic opportunities for members (Weber 1968, p. 46).

The tactics for managing social closure and maintaining the boundaries of the entity take various forms, such as notably accreditation (Weeden 2002, Abbott 2005). Accreditation[2] is a type of social valuation that establishes whether a candidate meets a standard, with a dichotomous outcome (Graffin and Ward 2010).

The task tends to be performed by the entity's elite, who defines methods and standards and leads on the formalization of professional control (Freidson 1984). The knowledge elite is given a monitoring role with power to screen or grade the persons scrutinized (Coffee 2006). As institutional agents (Scott 2008), these gatekeepers are accountable to the broader community (Durand and McGuire 2005) and entrusted to safeguard the entity's boundaries (Coslor et al. 2020).

When a valuation process confers access to a social entity, evaluators act as gatekeepers; their role goes beyond judging the abilities of the candidates. Gatekeepers face the challenging task of admitting high-quality newcomers (a centrifugal task) while maintaining the integrity of the social entity and the distinctiveness of its identity and knowledge domain (a centripetal task). We will argue that in this situation—contrary to what arguments based on the "quality discovery" view would suggest—boundary maintenance considerations lead evaluators to penalize high performers when valuing unfocused candidates. We provide details on a setting that has these features, the admission of candidates to scientific disciplines.

Boundary Maintenance in Academia
Academic Disciplines as Loci of Valuation
Our context is valuation in public science, a process that is often performed within disciplines. Self-defined by a subject remit and mirrored by departments within universities, disciplines represent social groupings, comprising organizational infrastructures, professional standards, and labor markets. Disciplines have strong cognitive bases; disciplinary training shapes how scholars interpret reality (Knorr Cetina 1999), what questions are worth studying, and what methods should be used. Disciplines delineate and compartmentalize knowledge, defining "what is permissible not to know" (Abbott 2001, p. 130). Disciplines are also social entities that are continually reproduced and have cultural functions; they offer a basis for identity, providing "dreams and models both of reality and of learning" (Abbott 2001, p. 130). As disciplines compete for students, funding, and political attention, their constituents perform boundary work aimed at establishing, preserving, or expanding their remits (Lenoir 1997, Lamont 2009).

The social nature of scientific disciplines is evident against a historical background. What defined a physicist was still ambiguous in early nineteenth century Britain when science was open to practitioners and amateurs (Gieryn 1983). The readership of somebody's work was less subject specific rather than informed by personal networks (Whitley 2000). As public science became institutionalized, disciplines obtained an important role in regulating access to science (Lenoir 1997). Within universities, hiring and tenure decisions are made collegially, primarily within discipline-defined departments and supported by letters from external discipline members. Equally, many grant-awarding panels are discipline specific, and where they are multidisciplinary, panelists tend to mutually respect the autonomy of each discipline (Lamont 2009).

Social valuation within disciplines tends to be performed by elite members. Initial admission to a discipline, by way of a PhD award, is often contingent on the verdict by high-status discipline members. The same is true for prestigious fellowship programs as funding organizations draw their panel members from the disciplinary elite. Admission is controlled by members personally invested in a discipline and with a stake in its future development.

Information on candidates used in academic valuation tends to be openly available. Because the system of public science is sustained by individuals' accumulation of reputation based on published research (Merton 1973), evaluators have a full view on candidates' publications and their reception as well as other performance metrics, such as grants or prizes. In contrast to industrial contexts, academics' achievements are measured in terms of their contribution to the discipline—rather than an organization—which renders them more easily comparable across individuals (Whitley 2000).

A specific case of discipline-specific academic valuation is the habilitation (or qualification) system used in countries including Brazil, France, Germany, Italy, and Spain to regulate access to the academic profession (Abramo and D'Angelo 2015). Habilitation is a licensure tactic, a (state-enforced) social closure mechanism that limits supply in a discipline (Weeden 2002); individual candidates are evaluated by discipline-based evaluators, and successful applicants are granted the permission to work as a senior academic in a university. The habilitation system represents the empirical context in this article, a setting where candidates are evaluated by gatekeepers representing scientific disciplines and where performance information is generally available (Bagues et al. 2017). We develop testable hypotheses on how boundary maintenance considerations might influence social valuation in this context.

The Valuation of Multidisciplinary Candidates
We now consider how academic evaluators judge candidates with an unfocused identity. Multidisciplinary scientists are unfocused as they work across disciplines and publish in journals belonging to multiple disciplines (Leahey et al. 2017). Because the evaluation process aims at sorting candidates according to their abilities, the question is how candidate focus interacts with candidates' perceived quality.[3] Because abilities are commonly not directly observable, evaluators use observable indicators to infer them, such as evidence of prior performance, which in academia, is amply available (Fini et al. 2018).

What would extant theory predict in this instance? Imagine an evaluator scrutinizing two candidates who are equally unfocused but differ in terms of observable performance indicators. The cognitive argument—nonfocused candidates confuse evaluators—would suggest that the evaluator, focused on discovering true quality, finds both candidates confusing. Multidisciplinary candidates may be ignored by discipline-based evaluators because they are unable or unwilling to entertain different epistemological or methodological frameworks. Although inclined to favor the candidate exhibiting higher prior performance, the evaluator may struggle to decipher the track record of the candidates. In this case, prior performance would be indeterminate in informing which candidate to choose.

The identity-as-shortcut argument—evaluators expect nonfocused candidates to be of lower quality—would predict that the evaluator does not require identity focus as a shortcut for discovering abilities because prior performance is observable and hence, would prefer the higher-performing candidate over the other one. In sum, both explanations predict that, quite intuitively, unfocused candidates with better prior performance records would be preferred by evaluators or to the very least, that observed performance would have little impact on which candidate is preferred. This happens because evaluators are primarily preoccupied with discovering the quality of the candidates.

However, we argue that the opposite occurs in an accreditation; the valuation penalty applied to unfocused candidates increases with their observable performance. Evaluators are discriminating against unfocused candidates for reasons other than cognitive clarity or inferred quality. Our core argument is that we observe this pattern because evaluators are less concerned about discovering candidate abilities, largely inferable, but are rather defending the boundary of the discipline; high performers may pose a greater threat to the social entity, and hence, they are penalized. We develop our argument here.

Social Closure and Boundary Maintenance

Applied to our setting, once we conceive of a scientific discipline as a closed social entity, there are several reasons why evaluators would be wary of admitting multidisciplinary candidates. First, the very fact of social closure and its implied status benefits are constitutive of a social identity linked to the entity. For peer evaluators with high stakes in a discipline, the identity of the discipline will represent an important part of their self-concept (Brewer and Gardner 1996, Turner 2010). This in itself establishes an aversion against admitting newcomers not adhering to the disciplinary canon.

Such reactions will be reinforced by concerns about the integrity of the entity. Evaluators may fear that multidisciplinary candidates, once admitted, dilute the identity of a discipline, reducing its appeal to both members and external constituents. They may perceive deviations from the disciplinary canon as identity threats (Rao et al. 2000, Petriglieri 2011) because these deviations imperil the discipline's distinctiveness, and undermine the value that the discipline's identity carries for them (Branscombe et al. 1999). Identity threats are often prompted by external events that call into question an entity's defining characteristics (Elsbach and Kramer 1996). In our case, the disciplinary representatives are themselves able to control the situation as they decide on who to admit and may hesitate to admit multidisciplinary newcomers who may prove disruptive to the discipline. Furthermore, because their knowledge and epistemic repertoire only partially overlap with the knowledge domain of a discipline, multidisciplinary newcomers may stretch or alter the discipline's jurisdiction and reduce its specificity (Gieryn 1999). Accepting unfocused candidates creates a risk of weakening or shifting the social boundaries of the discipline.

Evaluators may also be concerned that multidisciplinary candidates threaten the knowledge domain of their discipline in a context where scientific disciplines are in competition for defining each other's work. As Abbott (2001, p. 137) notes, "[b]odies of academic work are perpetually being redefined, reshaped, recast by the activities of the disciplines trying to take work form one another or to dominate one another." Multidisciplinary candidates may appear as menacing agents of change, bringing from the outside new perspectives that challenge the received understanding of subject matters, theories, and methods. The senior members of a discipline, scholars who have secured jurisdiction over a scientific domain, may have the most acute awareness of this risk.

In sum, multidisciplinary candidates represent a threat to both the identity and knowledge domain of the discipline. Crucially, high-performing multidisciplinary candidates are likely to be perceived as the most menacing ones. In academia, the distribution of performance across individuals is highly skewed, with a small number of highly talented and productive players having a disproportionate impact (Zucker and Darby 1996). These high performers will have considerable influence on the discipline when it comes, for instance, to choosing priority areas or exploring pathways for renewal. Moreover, high performers may also be awarded more prestigious positions, command higher salaries, and mobilize more resources (Merton 1968). For instance, well-published scientists often obtain influential managerial and political leadership positions, such as editorships at top academic journals and directorships at leading institutes. Thus, high performers may be perceived as having a superior ability to galvanize change as they will command the attention of the broader community (Podolny and Stuart

1995). Evaluators may then worry that, once admitted, high-performing candidates with unfocused identities may use their clout to shape the discipline to their liking. Although their capabilities may be beyond reproach, evaluators may justifiably doubt these candidates' commitment to maintaining the discipline and perceive them as a more pronounced threat. Extant work suggests that doubts over actors' commitment and loyalty toward a category can inform audience penalties in situations where concerns about capability can be ruled out (Phillips et al. 2013, Fini et al. 2018).

Overall, when evaluators have information on the abilities of the candidates and act as gatekeepers, we expect multidisciplinary candidates with a track record of high performance to suffer a higher evaluation penalty compared with their lower-performing multidisciplinary colleagues.

Hypothesis 1 (Boundary Maintenance Effect). *The accreditation penalty applied to multidisciplinary candidates increases with prior academic performance.*

Discipline-Level Variations

If our primary conjecture is accurate, evaluators should experience particular pressure to engage in boundary management in contexts where ill-fitting yet influential outsiders are perceived to be more threatening to the coherence of a discipline. Past work suggests that the size of a social entity affects the extent to which its members identify with it and are sensitive to potential identity threats. Size is defined as the number of social actors associated with a social entity. Research shows that small entities are liable to show stronger reactions to identity threats than majorities (Branscombe et al. 1999). Specifically, small entities are more vulnerable to threats to their distinctiveness because membership tends to be more salient to the members of such entities (McGuire et al. 1978). Moreover, membership in smaller entities is less diffused, and hence, they appear to members as being more distinctive compared with larger entities, which in turn, leads to stronger identification by members (Branscombe et al. 1999).

Applied to the context of academic accreditation, this suggests that the evaluation of high-performing multidisciplinary candidates differs across disciplines depending on size. Accreditors in smaller disciplines may feel, on the one hand, that their social entity is more distinctive as membership is less diffused and other outside disciplines appear more dominant and mainstream. On the other hand, accreditors in smaller disciplines may have a sense of being a beleaguered minority within a larger field populated by larger disciplines that can command more resources and determine field-wide decisions. For both reasons, accreditors in relatively smaller disciplines can be expected to set a higher bar for disciplinary focus in order to protect the discipline against the intrusion of newcomers who may prove disruptive to the social entity. We pose Hypothesis 2(a).

Hypothesis 2 (a). *The smaller the size of the academic discipline, the more pronounced the effect of prior academic performance is on the accreditation penalty applied to multidisciplinary candidates.*

Although discipline size may affect how sensitive accreditors are to identity threats, the distinctiveness of the discipline in relation to other disciplines may shape their level of tolerance for individual variation. Distinctiveness can be defined as the clarity of the boundary that distinguishes discipline membership from non-membership (Brewer 1991). An important marker of discipline distinctiveness is the publication outlets—usually journals—accepted as legitimate in a discipline (Clemens et al. 1995). Although some disciplines accept a wide variety of journals that they may share with other disciplines, others feature a small set of identified journals considered as an appropriate marker of discipline membership.

By definition, relatively nondistinctive disciplines are more open or lenient (Pontikes and Barnett 2015) with respect to who can be a member; valued outputs are shared with other disciplines. As a result, accreditors may be relatively tolerant toward admitting highly influential newcomers who may potentially reshape the discipline in the future. By contrast, in more distinctive disciplines where expected outputs by members are unique to the discipline and not shared with other disciplines, evaluators are likely to be more wary of influential newcomers who are perceived as being at odds with producing these outputs. Group identity distinctiveness has motivational properties for members, prompting them to act in the interest or defense of the entity (Brewer 1991). Hence, evaluators in more distinctive disciplines are likely to perceive a more pronounced threat to the entity's identity, leading them to be more guarded against unfocused newcomers. We pose Hypothesis 2(b).

Hypothesis 2 (b). *The more distinctive the academic discipline, the more pronounced the effect of prior academic performance is on the accreditation penalty applied to multidisciplinary candidates.*

Accreditor-Level Variations

Beyond features of the discipline—size and distinctiveness—we expect the structural position of peer accreditors within the discipline to condition the effect of prior performance on the accreditation of multidisciplinary candidates (Aadland et al. 2019). In particular, we expect the degree to which accreditors are typical representatives of a discipline to play a role. Although one would expect the gatekeepers to represent the typical

profile of a member, sharing characteristics that are frequent within a social entity (Durand and Paolella 2013), there will still be variation in the degree of typicality they exhibit relative to the mainstream of the discipline. At one end of the spectrum, accreditors who are highly typical may be very attentive and sensitive to the disciplinary focus of the candidates and the threat they represent. Because they are aligned with the existing identity of the discipline, they are unlikely to welcome potential disruptions caused by powerful yet unfocused newcomers joining. At the other end of the spectrum, less typical accreditors whose self-identity is less tightly connected to the identity of the discipline may not be as invested in their role of gate-keeper. They may have more tolerance for candidates' deviations from the canon of the discipline and may be more accepting of new talent influx even if this involves admitting candidates who may disrupt the discipline. We pose Hypothesis 3.

Hypothesis 3. *The more typical accreditors are of a discipline, the more pronounced the effect of prior academic performance is on the accreditation penalty applied to multidisciplinary candidates.*

Data and Methods
Empirical Setting
Exploring how boundary maintenance affects social valuation requires a setting where valuation conditions access to a social entity and is performed by invested peers. We also need performance information about candidates to be available to evaluators to rule out that the latter primarily uses identity focus as a shortcut for discovering candidates' abilities.

The setting of accreditation in academic disciplines has these characteristics. Our data are drawn from the national qualification system in Italy, introduced in 2010 as part of a wider reform aimed at improving hiring quality and transparency at public Italian universities. Although universities previously assessed candidates autonomously, the qualification introduced an additional nationwide accreditation step designed to determine whether an individual could be appointed to a senior academic position at an Italian public university. This exercise provides a suitable context for our study because it involves a large number of evaluation decisions under uniform conditions.

The accreditation system worked by soliciting nationwide applications from candidates who were then evaluated, separately for each discipline, by panels of full professors. Each application had to be specific to a discipline and one of two levels of seniority (associate or full professor). This means a candidate would, for instance, apply for being qualified at the associate professor level in astrophysics. The system permitted multiple applications in several disciplines and either level of seniority.

Evaluation outcomes were dichotomous (qualified/nonqualified); successful candidates were subsequently entitled to apply for open positions within the discipline and for the level of seniority they are qualified for at universities of their choice. Many applicants already worked in the university system as an assistant or associate professor, whereas a minority applied from outside.

Our data stem from the 2012 qualification round, which was the first time the scheme was run, attracting 68,973 applications. Candidates were required to submit, by November 2012, comprehensive resumes to be considered for qualification in any of 184 legally defined disciplines.[4] Within each discipline, applications were scrutinized by an evaluation panel staffed by five full professors: four panel members employed in the Italian higher education system and one external examiner based outside Italy.[5]

The Italy-based panel members were selected in the following way. Full professors employed in the Italian system were encouraged to apply to be nominated as an evaluator, provided they fulfilled certain requirements in terms of research proficiency. Those positioned above the median in their discipline with respect to at least two indicators of research proficiency entered the pool of eligible evaluators from which, in each discipline, four panel members were randomly drawn, ensuring that all members were from different universities. Because the pool of eligible evaluators can be regarded as representative of a discipline, we use the characteristics of the pool to construct some discipline-level variables. In addition, each panel was allocated a fifth international examiner drawn from a separate list of self-nominated academics based outside Italy.

In interviews we conducted with a sample of panel members, they highlighted their self-understanding as gatekeepers: "As panel members we are the representatives of our discipline." Another evaluator agreed: "The qualification creates a central power" for deciding admission to the discipline. Our respondents also emphasized the central trade-off between centripetal and centrifugal forces bearing on their discipline. On the one hand, they acknowledged the danger of admission to be overly focused on disciplinary preservation: "If you are too strict then you stifle schools of thought different from yours, or different scientific approaches." On the other, they pointed to the risks of multidisciplinarity: "The problem with a multidisciplinary candidate could be that they are a jack of all trades with no proper research profile." Hence, as one respondent underlined, it was important not to discard multidisciplinary candidates but to "judge them in their own merit." These testimonies illustrate that evaluators (a) perceived themselves as guardians of the discipline and (b) combined disciplinary fit and performance considerations in their assessment of candidates.

Table 1. 2012 National Scientific Qualification in Italian Academia

All resumes	Number of resumes	Number of individuals	Accreditation rate (by resume), %	Accreditation rate (by individual), %
Submitted	68,973	46,241		
Withdrawn	11,168	9,906		
Submitted and not evaluated[a]	2,308	2,091		
Submitted and evaluated	55,497	38,394		
Accredited	23,932	20,272	43	53

Note. Individuals were allowed to submit multiple resumes for associate professor, full professor, or both in one or more disciplines.

[a]In 10 of 184 disciplines, evaluations had not been completed by June 2014.

The task of each panel was to qualify, within each discipline, candidates at either the associate or full professor level subject to certain performance criteria. These criteria were defined by each panel within a general framework that prescribed evaluation dimensions and revolved primarily around research excellence (e.g., publication productivity and impact, grant acquisition, participation in editorial boards). After the applicant pool was finalized, each panel scrutinized the applications pertaining to their discipline and made qualification decisions by a majority of four votes.

The Ministry for Universities and Research published all information on candidates, evaluators, and decisions in early 2014,[6] and we downloaded it in mid-2014. Our sample is composed of 55,497 evaluated resumes submitted by 38,394 individuals in 174 disciplines (see Table 1).

Variables and Specification

Dependent Variable and Model Specification. For each resume, we model the probability for a candidate to be accredited in the 2012 qualification round. The variable *accreditation* is equal to one if a candidate's resume is granted qualification and zero otherwise. Notwithstanding the panel structure of our data, because the outcome variable pertains to 2014 only, we pooled the yearly data, creating cross-sectional measures characterizing academics' productivity, activities, and career paths. We employ a logit model, with standard errors clustered on individuals.

Independent Variables.

Prior Performance. A test of our theory requires data on information available to accreditors on candidates' track record. In academia, publications in peer-reviewed journals are the most common measure of prior performance. However, not all publications count equally; the standing of the journal where the contribution is published is highly consequential. To account for journal's standing, we obtained yearly impact factor data from Web of Science (WoS).[7] Of the 1,803,528 publications with an International Standard Serial Number included in the

evaluated resumes, 1,102,406 were in one of the 13,617 journals with a WoS journal impact factor assigned. Consistent with Toole and Czarnitzki (2010), we create a variable, *prior performance*, that represents the sum of the impact factors for the journals in which each article by a candidate appeared (as of 2012). This variable gives more weight to articles published in journals with higher impact factors:

$$Prior\ performance_i = \sum_{t \in T} \sum_{j \in J} Impact\ Factor_{i,j,t},$$

where *Impact Factor$_{i,j,t}$* is the WoS impact factor in year t of journal j in which the candidate i published. The vector $T = \{1997; 2012\}$ includes the years for which the WoS impact factor is available, and $J = \{1; 13,617\}$ represents the pool of journals in which candidates published. As the distribution of the variable is highly skewed, we use its logarithmic transformation, with values ranging between 0 and 8.27.

Disciplinary Match. *Disciplinary match*[8] captures the extent to which a candidate's publication record is aligned with the discipline where she seeks accreditation, depicting identify focus in our context. A multidisciplinary candidate spans disciplines and will exhibit low disciplinary match. We measure *disciplinary match* by considering the journals in which candidates have published. In academia, publications are critical markers of identity, and the journals in which scholars publish are public indicators of disciplinary affiliation (Clemens et al. 1995). We assume that the remit of each discipline is represented by the basket of journals in which its members publish. Hence, a candidate exhibits maximum *disciplinary match* if she publishes in the same basket of journals in which the discipline members collectively publish. We operationalize *disciplinary match* by measuring the share of a given candidate's publications that appears in journals in which the pool of 6,194 evaluators has published (pool journals). We reason that the pool of eligible evaluators in the discipline represents the canon of each discipline. Specifically, we count the number of articles published up to 2012 by a candidate in pool journals and divide this number by the total number of articles in journals published by the candidate up to 2012. The

result is a continuous measure ranging from zero to one. The value is zero when a candidate has not published in any pool journals, and the value is one when a candidate has published exclusively in pool journals, indicating maximum disciplinary match:

$$Disciplinary\ match_i = \frac{\sum_{j\in J} Min[N_{i,j}; M_j]}{\sum_{j\in J} N_{i,j}},$$

where $N_{i,j}$ represents the cumulative number of publications in journal j by candidate i and M_j represents the cumulative number of publications in journal j by the pool of evaluators.

Discipline Size. *Discipline size* is operationalized by counting the nationwide number of individuals (assistant, associate, and full professors) affiliated with any given discipline as of the end of 2012. The number ranges between 71 and 915. For illustration, in the disciplinary domain of physics, astrophysics is the smallest discipline (225 members) followed by applied physics (290) and theoretical physics (307). In the analysis, we logarithmically transform these figures, with values ranging from 4.28 to 6.82.

Discipline Distinctiveness. Disciplines vary according to whether they regard as legitimate only work appearing in journals unique to the discipline or alternatively, work appearing in a wider set of outlets shared with other disciplines (Clemens et al. 1995). We operationalize *discipline distinctiveness* as the degree to which a discipline shares the journals in which its members publish with other disciplines. For each discipline, we divide the number of articles published by the pool of eligible evaluators in journals *unique* to the discipline by the overall number of articles published by the pool of eligible evaluators. The variable ranges between zero and one, indicating a higher level of *discipline distinctiveness* as the variable gets closer to one:

$$Discipline\ distinctiveness_s$$
$$= \frac{\sum_{j\in J} M_{s,j} - \sum_{j\in J} Min[M_{s,j}; M_{S-s,j}]}{\sum_{j\in J} M_{s,j}},$$

where $M_{s,j}$ represents the cumulative number of publications in journal j by the pool of evaluators belonging to discipline s. In turn, $Min[M_{s,j}; M_{S-s,j}]$ represents the number of publications by the pool of evaluators in discipline s in journals in which the pool of evaluators belonging to other disciplines have also published. $S = \{1; 174\}$ represents the range of disciplines seeking candidacies. In physics, for instance, applied physics (with a *distinctiveness* value of 0.04) is the least distinctive discipline followed by theoretical physics (0.07), and astrophysics (0.50) is the most distinctive.
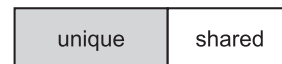
Panel Typicality. *Panel typicality* captures the representativeness of the evaluation panel within the discipline. We operationalize this for each discipline by comparing the journals in which the members of the evaluating panel publish (panel journals) with the journals in which the pool of eligible evaluators publishes (pool journals). For any given discipline, we count the number of articles published up to 2012 by the panel members in pool journals and divide this number by the total number of pool journals articles up to 2012. The result is a continuous measure ranging from zero to one; as the overlap between the publications of panel members and those of the pool of eligible evaluators increases, this value gets closer to one, indicating maximum panel typicality. Panels vary in terms of disciplinary typicality as their members are randomly drawn from the pool of eligible evaluators. For example, the disciplinary typicality of panel members was higher in astrophysics (0.19) compared with applied physics (0.13) and theoretical physics (0.13):

$$Panel\ typicality_s = \frac{\sum_{j\in J} Min[P_{s,j}; M_j]}{\sum_{j\in J} M_j},$$

where $P_{s,j}$ represents the cumulative number of publications in journal j by the panel of evaluators in discipline s and M_j represents the cumulative number of publications in journal j by the pool of eligible evaluators. A summary of our independent variables is presented in Figure 1.

Control Variables. We control for several factors at candidate, panel, and discipline levels that may affect *accreditation*. We control for *candidate age* as younger academics may have higher chances of obtaining accreditation. One may expect candidates already holding a faculty position in the Italian university system (as assistant or associate professors) to have higher accreditation chances than outsiders. All faculty members working in the Italian university system are already affiliated with a discipline because each academic position is associated with 1 of the 184 official disciplines. For instance, a candidate may hold an assistant professor position in astrophysics. This candidate may then apply for accreditation as an associate professor in astrophysics or in a different discipline, say in theoretical physics. To account for all of these (as of December 2012), we include a three-level categorical variable that can take three values: (i) *no faculty position* (candidate not holding a faculty position in the Italian system and hence, not affiliated with any discipline); (ii) *faculty position in focal discipline* (candidate applying for qualification in the discipline she is already affiliated with); and (iii) *faculty position in another discipline* (candidate applying for qualification outside the discipline she is already affiliated with). The variable is

Figure 1. Independent Variables

Independent variable	Definition	Illustration
Candidate: Prior performance	Sum of the Web of Science impact factors for the journals in which each article by a candidate appeared (logged)	–
Candidate: Disciplinary match	Share of a given candidate's publications that appears in journals in which the pool of evaluators has published	candidate's publications / pool's publications
Discipline: Size	Number of individuals affiliated with the discipline nationwide (logged)	–
Discipline: Distinctiveness	Degree to which a discipline shares the journals in which its core members publish with other disciplines	pool's journals / unique / shared
Panel: Typicality	Representativeness of the evaluation panel within the focal discipline in terms of publications	panel's publications / pool's publications

operationalized using three dichotomous indicators, with the first category being omitted in the multivariate analysis. We include a variable equal to one if the resume is submitted as an *application for full professorship* and zero for associate professor, as position rank may affect accreditation chances. *Disciplinary tenure* may also matter; we cumulate the number of years the candidate has been affiliated (as faculty) with the focal discipline according to the government-run "University search" portal.[9] The measure takes into account that an academic can change discipline annually and can leave the university sector and return. To account for structural proximity between candidate and panel members, we add a dichotomous variable (*same university*) that takes the value of one if a candidate and evaluator share employment at the same university.

We also control for a variety of candidates' other achievements. To account for the ability to secure funds, we include the number of peer-reviewed *international research projects* and *national research projects* awarded to an academic as a principal investigator. We include the number of *journal editorial board positions* and *research fellowships* held by the candidate. We control for enterprising behavior (*academic entrepreneurship*) by establishing whether an academic engaged in a firm as a founder or shareholder (in which case the variable takes the value of one). We also count the number of *patents* held by the candidate. To measure teaching proficiency, we cumulate the number of *teaching fellowships* awarded to each individual. To account for the perceived quality of candidates' employers, we control for *university rank*. Our measure is equal to a university's position in the 2012 QS World University Ranking and is a variable ranging from 1 (highest status) to 500 (lowest status); individuals at universities outside the top 500 are attributed a value

of 500. Finally, we control for preexisting relationships between candidate and evaluators through a variable called *coauthorship with panel*, which is equal to the number of publications a candidate has coauthored with individuals on the panel of evaluators. All these variables are computed as of the end of 2012.

Finally, we include panel- and discipline-level factors. For each panel, we calculate the percentage of male evaluators (*panel male %*). We include *panel workload* as the log-transformed number of resumes submitted to each of the 174 panels. For each discipline, we measure *evaluator average tenure* in the focal discipline for the pool of all possible evaluators. All models include either (two-digit) discipline (173 dummies) or (one-digit) disciplinary domain (13 dummies) controls.

Results

Table 2 and Table A0 in the e-companion[10] show descriptive statistics and correlations for all variables. Overall, 43% of the resumes obtained *accreditation*—they were granted qualification. In Figure 2, we compare the prior performance of candidates. As expected, accredited candidates show higher mean *prior performance* (2.83) than nonaccredited ones (2.05). A closer look reveals that the performance gap is large and significant among candidates with high disciplinary match (3.58 versus 2.98, $t = 26.8$). Conversely, there is no significant performance difference between accredited and nonaccredited candidates with low disciplinary match. This is counterintuitive; one may expect performance to play a role in accreditation for *all* candidates (those with high and low disciplinary match) unless, as our theory suggests, evaluators interpret prior performance not just as a positive signal of quality but also, as a negative cue (i.e., a threat to disciplinary boundaries). This preliminary result,

Table 2. Descriptive Statistics

	Mean	Standard deviation	Min	Max
Accreditation	0.43	0.50	0.00	1.00
Candidate: Age	44.63	7.89	23.00	74.00
Candidate: Faculty position in focal discipline	0.40	0.49	0.00	1.00
Candidate: Faculty position in another discipline	0.12	0.33	0.00	1.00
Candidate: No faculty position	0.48	0.50	0.00	1.00
Candidate: Application for full professorship	0.31	0.46	0.00	1.00
Candidate: International research projects	0.14	0.79	0.00	21.00
Candidate: National research projects	0.60	2.28	0.00	64.00
Candidate: Editorial board positions	0.12	0.61	0.00	21.00
Candidate: Teaching fellowships	0.51	2.49	0.00	89.00
Candidate: Research fellowships	0.33	1.47	0.00	35.00
Candidate: Academic entrepreneurship	0.05	0.21	0.00	1.00
Candidate: Patents	0.23	1.61	0.00	106.00
Candidate: Disciplinary tenure	3.54	4.92	0.00	13.00
Candidate: Same university	0.08	0.27	0.00	1.00
Candidate: University rank	458.17	98.59	1.00	500.00
Candidate: Coauthorship with panel	0.41	3.64	0.00	149.00
Candidate: Prior performance	2.39	2.21	0.00	8.27
Candidate: Disciplinary match	0.48	0.38	0.00	1.00
Panel: Male %	0.80	0.23	0.00	1.00
Panel: Workload	439.57	226.14	64.00	978.00
Panel: Typicality	0.13	0.11	0.00	1.00
Discipline: Evaluators average tenure	17.11	1.61	14.03	23.23
Discipline: Size	5.80	0.51	4.28	6.82
Discipline: Distinctiveness	0.29	0.21	0.00	1.00

Note. N = 55,497 (number of resumes).

however, may stem from disregarded confounding factors. In what follows, we turn to multivariate analysis to further explore the interaction of prior performance and disciplinary match in shaping accreditation chances.

Table 3 shows the results of logit models reporting exponentiated coefficients (odds ratios (ORs)). An estimated odds ratio smaller (larger) than one indicates a

Figure 2. (Color online) Comparison of Accredited and Nonaccredited Resumes
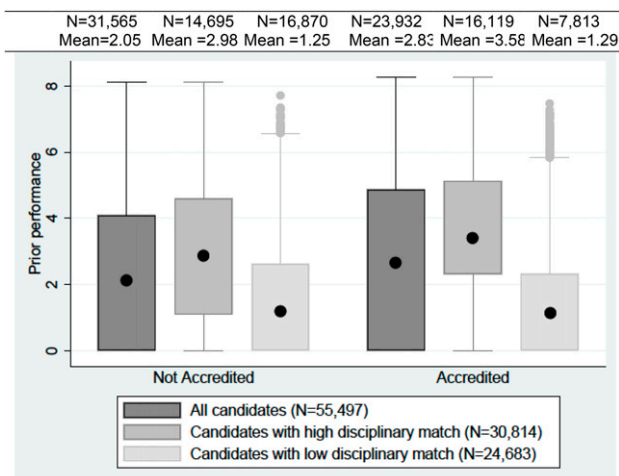
Notes. Dots indicate mean values. High and low disciplinary matches are calculated as being above and below the mean, respectively.

negative (positive) relationship. The average variance inflation factor is equal to 2.30 with a maximum value of 6.78, indicating a low risk of multicollinearity issues. Model (1) includes the main variables and controls at the candidate level, and Model (2) includes the main variables and controls at the candidate and discipline levels. *Prior performance* and *disciplinary match* are positively and significantly related to *accreditation* (OR > 1, $p < 0.001$). Model (2) shows that a 100% increase in *prior performance* is associated with almost a 25% increase in the odds of being accredited; a 10% increase in *disciplinary match* is associated with a more than 10% increase in accreditation odds. *Discipline distinctiveness* is positively and significantly related to *accreditation* (OR > 1, $p < 0.001$); conversely, *discipline size* and *panel typicality* are negatively and significantly related to *accreditation* (OR < 1, $p < 0.01$).

Model (3) tests Hypothesis 1. As predicted, the interaction term between *prior performance* and *disciplinary match* is positive and significant (OR = 1.350, $p < 0.001$). Figure 3 illustrates this result; for any given level of *prior performance*, the vertical distance between the two curves indicates the penalty experienced by multidisciplinary (low-match) candidates compared with high-match candidates. Although a penalty is observed across the full range of prior performance, it increases with prior performance, providing evidence for the key claim of our study. Low performers (one standard deviation below the mean) incur an approximate 32%

Table 3. Accreditation Probability: Full Models

Dependent variable: Accreditation (0/1)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Candidate: Age	0.983***	0.986***	0.986***	0.986***	0.986***	0.986***	0.985***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Candidate: Faculty position in focal discipline	4.694***	4.496***	4.378***	4.375***	4.408***	4.346***	4.377***
	(0.208)	(0.187)	(0.182)	(0.182)	(0.184)	(0.181)	(0.183)
Candidate: Faculty position in another discipline	1.125**	1.115**	1.156***	1.154***	1.164***	1.165***	1.174***
	(0.044)	(0.040)	(0.041)	(0.041)	(0.042)	(0.042)	(0.042)
Candidate: Application for full professorship	0.509***	0.593***	0.590***	0.589***	0.588***	0.591***	0.587***
	(0.014)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Candidate: International research projects	1.176***	1.166***	1.173***	1.172***	1.174***	1.173***	1.175***
	(0.024)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
Candidate: National research projects	1.082***	1.070***	1.072***	1.072***	1.073***	1.072***	1.073***
	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Candidate: Editorial board positions	1.256***	1.248***	1.261***	1.258***	1.257***	1.263***	1.254***
	(0.033)	(0.032)	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
Candidate: Teaching fellowships	1.010*	1.013**	1.012*	1.012*	1.012**	1.012*	1.013**
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Candidate: Research fellowships	1.025**	1.035***	1.039***	1.039***	1.038***	1.039***	1.039***
	(0.008)	(0.008)	(0.008)	(0.009)	(0.008)	(0.009)	(0.009)
Candidate: Academic entrepreneurship	1.031	1.033	1.035	1.033	1.036	1.044	1.050
	(0.055)	(0.051)	(0.052)	(0.052)	(0.052)	(0.053)	(0.053)
Candidate: Patents	1.016*	1.001	1.000	1.000	1.000	0.999	0.998
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Candidate: Disciplinary tenure	1.002	0.990*	0.991*	0.991*	0.990*	0.991*	0.991*
	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Candidate: Same university of evaluators	1.473***	1.471***	1.467***	1.468***	1.474***	1.470***	1.476***
	(0.060)	(0.057)	(0.057)	(0.057)	(0.058)	(0.058)	(0.058)
Candidate: University rank	1.000*	1.000*	1.000*	1.000*	1.000*	1.000*	1.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Candidate: Coauthorships with panel	1.023***	1.026***	1.021**	1.021**	1.021**	1.020**	1.019**
	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)
Panel: Male %		1.528***	1.512***	1.515***	1.482***	1.407***	1.273***
		(0.074)	(0.073)	(0.074)	(0.072)	(0.069)	(0.064)
Panel: Workload		1.000	1.000**	1.000***	1.000**	1.000+	1.000*
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Discipline: Evaluator average tenure		1.074***	1.076***	1.078***	1.076***	1.078***	1.077***
		(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Discipline: Size		0.707***	0.659***	0.638***	0.666***	0.721***	0.666***
		(0.022)	(0.021)	(0.029)	(0.021)	(0.024)	(0.031)
Discipline: Distinctiveness		1.333***	1.337***	1.380***	0.983	1.332***	0.947
		(0.076)	(0.076)	(0.080)	(0.074)	(0.076)	(0.073)
Panel: Typicality		0.730**	0.782*	0.807*	0.815*	0.646***	0.593***
		(0.078)	(0.082)	(0.085)	(0.085)	(0.082)	(0.075)
Candidate: Prior performance	1.736***	1.379***	1.164***	0.772*	1.198***	1.096***	0.495***
	(0.026)	(0.013)	(0.016)	(0.090)	(0.023)	(0.023)	(0.077)
Candidate: Disciplinary match	4.170***	2.912***	1.869***	3.069**	1.354***	2.254***	14.586***
	(0.169)	(0.099)	(0.077)	(1.324)	(0.095)	(0.134)	(6.892)
Candidate: Prior performance × Candidate: Disciplinary match			1.350***	1.950***	1.316***	1.285***	1.003
			(0.023)	(0.351)	(0.035)	(0.038)	(0.243)
Candidate: Prior performance × Discipline: Size				1.074***			1.142***
				(0.022)			(0.028)
Candidate: Disciplinary match × Discipline: Size				0.917			0.688***
				(0.069)			(0.056)
Candidate: Prior performance × Candidate: Disciplinary match × Discipline: Size				0.938*			1.027
				(0.029)			(0.039)
Candidate: Prior performance × Discipline: Distinctiveness					0.863**		0.905+
					(0.045)		(0.046)
Candidate: Disciplinary match × Discipline: Distinctiveness					2.586***		2.841***
					(0.444)		(0.506)
Candidate: Prior performance × Candidate: Disciplinary match × Discipline: Distinctiveness					1.195*		1.248**
					(0.094)		(0.098)

Table 3. (Continued)

Dependent variable: Accreditation (0/1)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Candidate: Prior performance × Panel: Typicality						1.338**	1.710***
						(0.140)	(0.217)
Candidate: Disciplinary match × Panel: Typicality						0.150***	0.072***
						(0.064)	(0.032)
Candidate: Prior performance × Candidate: Disciplinary match × Panel: Typicality						1.885***	2.929***
						(0.346)	(0.677)
Two-digit discipline fixed effects (173 dummies)	Yes	No	No	No	No	No	No
One-digit discipline fixed effects (13 dummies)	No	Yes	Yes	Yes	Yes	Yes	Yes
Number of resumes	55,497	55,497	55,497	55,497	55,497	55,497	55,497
Number of individuals	38,394	38,394	38,394	38,394	38,394	38,394	38,394
Pseudo-R^2	0.228	0.154	0.159	0.159	0.160	0.160	0.163
Log pseudolikelihood (0)	−37,941	−37,942	−37,943	−37,944	−37,945	−37,946	−37,947
Log pseudolikelihood	−29,292	−32,114	−31,925	−31,916	−31,887	−31,870	−31,756

Notes. The specifications are logit models. Standard errors (between paratheses) are clustered on individuals. ORs are reported (OR > 1 indicates increased odds of accreditation; OR < 1 indicates decreased odds of accreditation). Candidate: No faculty position is the omitted category (Candidate: Faculty position in focal discipline and Candidate: Faculty position in another discipline are the two categories included in the analysis).

*p < 0.05; **p < 0.01; ***p < 0.001; +p < 0.1.

penalty, on average, for lacking *disciplinary match* ((0.21 − 0.31)/0.31); the penalty increases to about 49% ((0.38 − 0.75)/0.75) for high performers (one standard deviation above the mean). Figure 3 reports the predicted values estimated by keeping all variables at their means; for completeness, Figure A1 in the e-companion plots the predicted values by keeping all continuous variables at their means and dichotomous variables at their observed values.

In Models (4) and (5), we test Hypotheses 2, (a) and (b). Model (4) supports Hypothesis 2(a); *discipline size* weakens the boundary maintenance effect (OR = 0.938, p < 0.05), suggesting that multidisciplinary candidates are further penalized for prior performance in small disciplines. Figure 4 illustrates how the penalty applied

Figure 3. (Color online) Predicted Accreditation Penalty at Different Levels of Performance

Notes. Predicted values were estimated using Model 3 by keeping all variables at their means. The graph shows 95% confidence intervals.

to multidisciplinary candidates varies with prior performance for small and large disciplines. As predicted, the penalty increases more strongly with prior performance for candidates in small disciplines compared with large disciplines; the slopes pertaining to low-match and high-match candidates diverge more markedly in small disciplines.

Model (5) suggests that *discipline distinctiveness* is associated with a greater penalty for performance applied to low-matched candidates (OR = 1.195, p < 0.05). This finding, in line with Hypotheses 2(b), suggests that less distinctive disciplines are more accepting of high-performing multidisciplinary applicants. Figure 5 shows that the penalty increases more strongly with prior performance for candidates in highly distinctive disciplines compared with slightly distinctive disciplines; the slopes pertaining to low-match and high-match candidates diverge more markedly in highly distinctive disciplines.

In Model (6), we test the moderating effect of *panel typicality*. As per Hypothesis 3, we find that the penalty applied to multidisciplinary candidates for performance increases significantly with the typicality of the panel of evaluators (OR = 1.885, p < 0.001). Conversely, the penalty is attenuated when evaluators are less representative of their discipline. Figure 6 shows how the penalty varies with prior performance for candidates evaluated by highly typical panels compared with less typical panels. The divergence across conditions is highest for candidates in the middle of the performance distribution, leveling off at very high levels of performance—representing a small percentage of candidates; this suggests that panels with high disciplinary match may reduce the penalty for exceptionally strong candidates. The full specification is shown in Model (7). Figure A2 in the e-companion shows the aggregated plots.
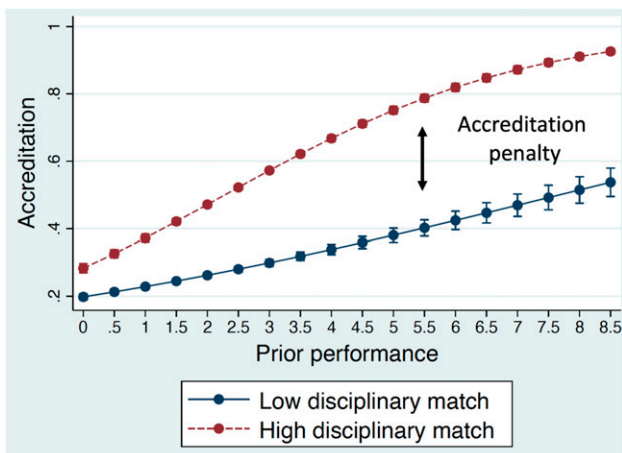
Figure 4. (Color online) Accreditation Penalty Moderated by Discipline Size
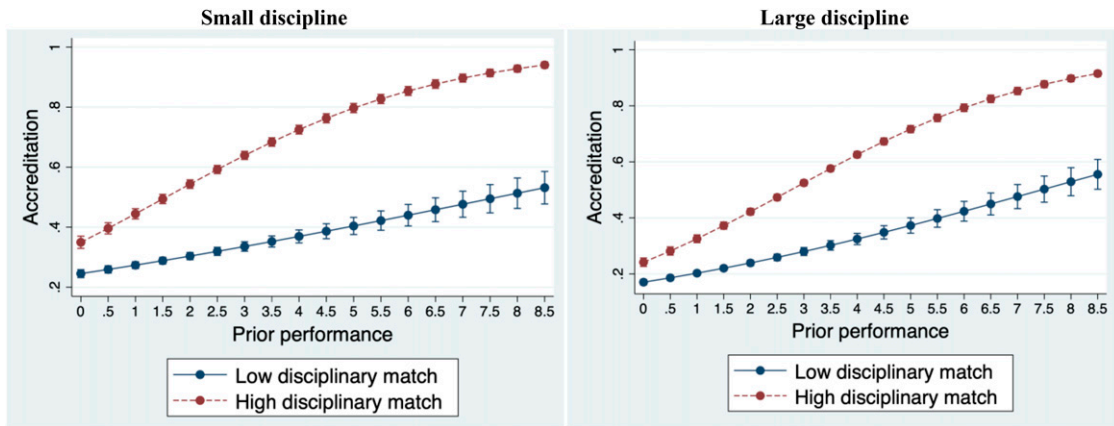
Notes. Predicted values were estimated using Model 4 for values of discipline size at one standard deviation below the mean (left panel) and above the mean (right panel), keeping all other variables at their means. The graphs show 95% confidence intervals.

We perform ten sets of robustness checks to validate our findings; they are detailed in the e-companion. (See Figures A3–A8, and Table A1 in the e-companion).

Alternative Explanations

We predict that, holding constant *disciplinary match*, high-performing multidisciplinary candidates incur a higher evaluation penalty compared with lower performers. This happens because the evaluators act as gatekeepers and aim to preserve the social boundaries of the discipline. In this section, we discuss alternative explanations and present results that lend further support to our argument.

First, we test whether multidisciplinary candidates are more likely to be rejected not because they threaten the boundaries of the discipline but because their abilities may be of little relevance to the focal discipline. To rule this out, we identify candidate abilities that are specific to the focal discipline by considering only their articles in journals that are core to the discipline. For any given candidate, we create the variable *prior core performance* by cumulating the impact factors of only the journals in which both the candidate and the professors in the pool of eligible evaluators published, hence disregarding articles in journals outside the discipline. This variable provides a conservative estimate as evaluators are likely to put at least some value on the abilities underpinning contributions published outside core journals. Replacing *prior performance* with *prior core performance* in our estimations, we find that the interaction term between *prior core performance* and *disciplinary match* remains positive and significant (OR = 1.091, $p < 0.001$). This shows that accreditors penalize unfocused high performers even when only their abilities directly relevant for the discipline are considered.

Second, we explore whether high-performing multidisciplinary candidates are penalized because they are

Figure 5. (Color online) Accreditation Penalty Moderated by Discipline Distinctiveness
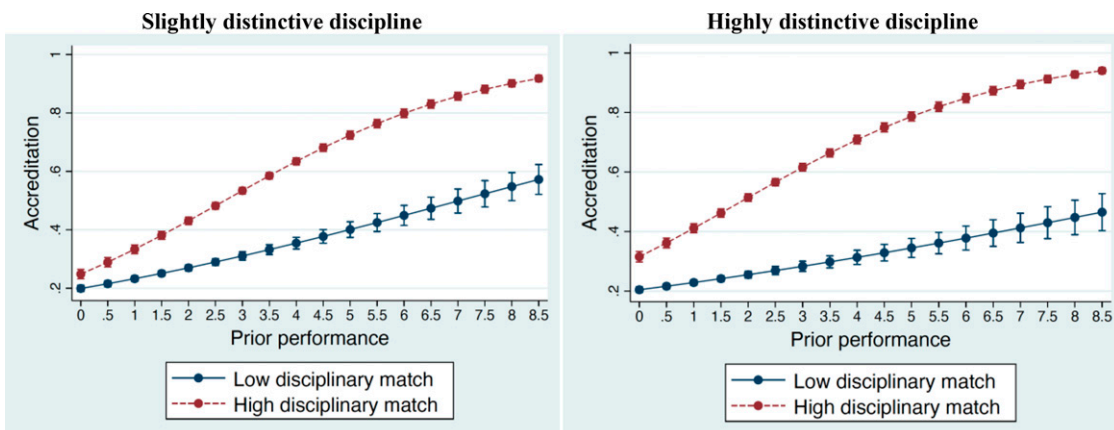
Notes. Predicted values were estimated using Model 5 for values of discipline distinctiveness at one standard deviation below the mean (left panel) and one standard deviation above the mean (right panel), keeping all other variables at their means. The graphs show 95% confidence intervals.

Figure 6. (Color online) Accreditation Penalty Moderated by Panel Typicality
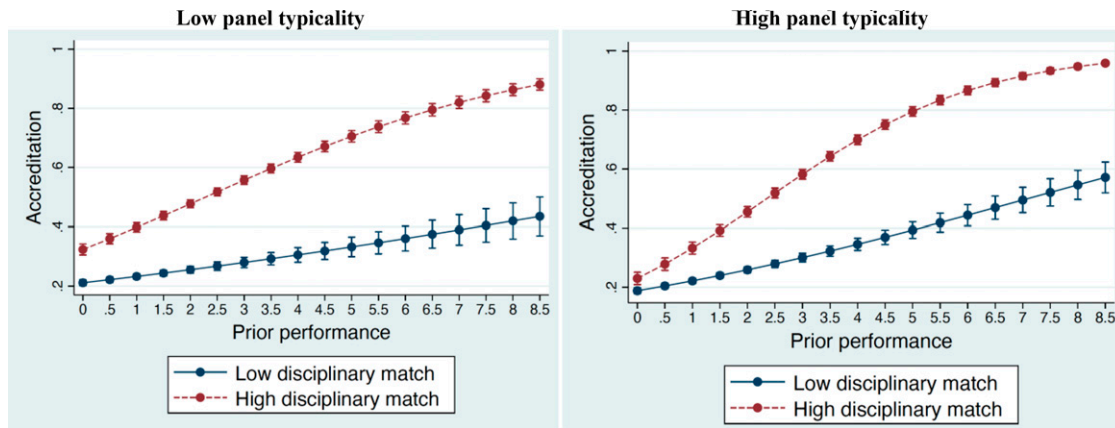
Notes. Predicted values were estimated using Model 6 for values of panel typicality at one standard deviation below the mean (left panel) and one standard deviation above the mean (right panel), keeping all other variables at their means. The graphs show 95% confidence intervals.

difficult to evaluate. In theory, such a difficulty would make the effect of observed performance irrelevant; in the extreme, evaluators would not be able to tell which candidate performs better than another. To the very least, this difficulty would not explain that high performers suffer a higher penalty than lower performers. We nonetheless explore whether accounting for evaluators' ability to assess multidisciplinary work affects our results. We reason that evaluator panels with a multidisciplinary track record are more skilled at evaluating multidisciplinary candidates and operationalize *ability to evaluate multidisciplinarity* by counting the distinct WoS journals categories in which each panel of evaluators published up to 2012. We expect that the more journal categories a panel published in collectively, the higher its ability to evaluate multidisciplinary scholars is. When controlling for the *ability to evaluate multidisciplinarity*, the interaction term between *prior performance* and *disciplinary match* remains positive and significant across the whole range of *ability to evaluate multidisciplinarity*. Also, when the three variables are interacted, the interaction is significant and negative, suggesting that, even if the performance penalty applied to high-performing multidisciplinary candidates diminishes with an increase in *ability to evaluate multidisciplinarity*, the penalty is still present and significant.

Third, one may speculate that evaluators could discriminate against high performers for reasons of personal comparison or competition (rather than a perceived threat to the discipline as a whole). We constructed a measure of overlap between candidates and examiners (i.e., *candidate-panel similarity*) (see Figure A9 in the e-companion). Unsurprisingly, we found it to be rather correlated with our disciplinary match variable (at 78%). To address multicollinearity concerns, we orthogonalized the variables

using a Gram–Schmidt procedure and interacted them. The interaction is negative and significant, suggesting a decrease in the evaluation penalty for higher levels of candidate-panel similarity (Figure A9(b) in the e-companion). This result suggests that evaluators are not swayed by competition concerns but rather, tend to welcome candidates that are proximate to them personally. Note that using observed (nonorthogonalized) variables yields qualitatively the same result (Figure A9(a) in the e-companion). As our measure may not properly capture the difference between personal competition and discipline-level threat, we cannot exclude that personal competition concerns may be in play in evaluators' penalty for high-performing multidisciplinary candidates.

Discussion

What underlies the well-documented evaluation penalty incurred by actors lacking a focused identity and hence, falling foul of the categorical imperative? Prior work suggests that evaluators are confused by unfocused candidates or regard them as lacking quality. Our study advances a different explanation; unfocused candidates are penalized because they threaten the boundaries of a social entity. We provide evidence for this explanation by showing that, using data from the 2012 nationwide academic qualification process in Italy, the evaluation penalty incurred by multidisciplinary candidates was more pronounced for high-performing candidates compared with weaker candidates of similar focus (as reflected in the positive interaction effect between multidisciplinarity and performance).

The effect is sizable; the average penalty applied to high-performing multidisciplinary candidates is just over 50% higher than the penalty applied to low-performing multidisciplinary candidates (with high and

low being defined as one standard deviation above and below the mean performance, respectively). The plausibility of our main conjecture is strengthened by the fact that the effect is stronger in smaller and distinctive disciplines and when the panel of evaluators was typical of the focal discipline, as in all these cases, we would expect evaluators to be more defensive about the discipline. These findings are robust and hold when considering alternative explanations.

These results do not square with extant theory. If evaluators found it hard to understand multidisciplinary candidates, they may ignore their track record; if they interpreted multidisciplinarity as a sign of lower skills or weaker potential, evidence of past performance would assuage their concerns about candidates' abilities. In short, existing theory would suggest that higher performance might either help the candidates or at the very least, be unaccounted for. Understanding why past performance may become a liability entails, we argue, a change in perspective. In accreditation processes, ample information is available about candidates' track record; evaluators are not much invested in discovering the unobservable quality of the candidates. Rather, for evaluators acting as gatekeepers preoccupied with maintaining the borders of their discipline, high-performing multidisciplinary candidates present a much greater threat than less successful unfocused candidates. Our study has implications for several bodies of work.

Contribution to the Social Valuation Literature
Our study offers an alternative theoretical pathway to understand the penalty incurred by unfocused actors. Most recent research in this area has explored the conditions under which the penalty for failing to submit to the categorical imperative may *not* be found. For instance, well-informed audiences—such as venture capitalists (Pontikes 2012) or law firms' clients (Paolella and Durand 2016)—may prefer unfocused actors rather than penalizing them. Unfocused candidates may enjoy a premium in contexts characterized by strong screening mechanisms (Merluzzi and Phillips 2016), when there is little doubt about candidates' capabilities (Zuckerman et al. 2003), or when there is high environmental uncertainty (Tang and Wezel 2015). Another set of studies has highlighted that lack of focus can be compensated for by high status (Phillips et al. 2013, Sgourev and Althuizen 2014, Kacperczyk and Younkin 2017) or authenticity (Hahl and Ha 2020). These studies imply that the very reason for the penalty is that evaluators equal lack of focus with lack of quality (Zuckerman 2017), suggesting that when uncertainty over quality is removed, the penalty should disappear.

Our study takes a different direction. Rather than positing that poor (imputed) quality or cognitive confusion causes the penalty, we highlight an overlooked alternative theoretical mechanism; unfocused candidates are kept at bay by evaluators wary of diluting the boundaries of a social entity (Abbott 1995). Critically, this mechanism is only activated under strict boundary conditions: when the evaluation gives access to a closed social entity and is conducted by evaluators highly invested in their gatekeeper role and guarding the boundaries of the entity (Lounsbury and Glynn 2001, Coffee 2006). The mechanism is thus key to understanding why unfocused candidates incur an evaluation penalty even when evaluators have little uncertainty concerning their capabilities.

In the context of academic accreditation, highly invested peers are in charge of conducting the admission process. In line with prior literature, we find that they apply a significant penalty to multidisciplinary candidates. However, contrary to what extant explanations would suggest, the penalty applied to multidisciplinary candidates grows with candidates' observable performance record. The penalty does not increase because evaluators do not care about candidates' capabilities; "scientific excellence" is a key accreditation criterion. Moreover, uncertainty about candidates' abilities is limited as accreditors have full information about their scientific track record. The identity signal is thus of limited use for discovering abilities. The penalty does not increase because evaluators are more confused by higher-performing multidisciplinary candidates as they have a similar amount of information available across the spectrum of candidates. Rather, high performance is indicative of a potential threat to the boundaries of the social entity (the academic discipline). Compared with less successful unfocused candidates, high-performing unfocused newcomers are likely to have more resources and clout should they seek to alter the identity and the knowledge domain of the discipline. By being careful about admitting high-flying potential disruptors, the gatekeepers maintain the boundaries of the social entity in which they are invested.

The theory has important implications. When boundary maintenance operates, unfocused candidates may suffer from an evaluation penalty even when there is no or limited uncertainty regarding their abilities. Hence, our insights may be generalizable to many other instances of accreditation (Graffin and Ward 2010) through which membership to an organization is conferred and where candidates disclose their track record. In extreme cases (e.g., entry to an aristocratic club), the evaluation may be almost entirely driven by boundary maintenance considerations without much regard for the candidate's abilities. In organizational settings, boundary maintenance may affect recruitment

decisions, penalizing high performers amongst unconventional candidates. This likely applies to professional organizations in which groups, practice areas, or disciplines strive to maintain their boundaries (e.g., hospitals, professional services organizations, universities) (Burri 2008).

Finally, the theoretical mechanism—boundary maintenance—we highlight in no way invalidates or replaces existing theoretical explanations for the categorical imperative (i.e., the penalty for unfocused identities). Rather, it complements prior theory. We do not claim that the mechanisms identified by prior literature (confusion, quality discovery) are not at play in other contexts, nor do we exclude that they may co-occur even in our empirical context. Extensive academic training comes with potent cognitive frameworks that underlie evaluators' foci of attention and evaluative schemas. In general, academics are prone to ignore or discount work that is foreign to their discipline, penalizing multidisciplinary profiles. Although the availability of ample information on candidates' track record in the qualification process may reduce the effect of otherwise powerful cognitive mechanisms, evaluators may find it particularly frustrating or threatening to evaluate high-performing candidates. In this way, cognitive costs may be complementary to boundary maintenance as the struggle to interpret multidisciplinary candidates is perceived as threatening. Future research may further examine whether the boundary maintenance mechanism we explore in this study has a cognitive component by separately operationalizing boundary maintenance effects and cognitive challenges more directly.

Further to scope conditions, although academic accreditation is particularly conducive to boundary maintenance, the mechanism may not produce much effect in other circumstances. When access to a closed social entity is not at stake or evaluators are not acting as gatekeepers, the boundary management mechanism is unlikely to be activated. This may be the case in one-time evaluations or those with few long-term consequences from the evaluator's viewpoint (Zuckerman 2012, Giorgi and Weber 2015, Ertug et al. 2016). Equally, the mechanism is unlikely to apply when the evaluators are intermediaries, such as critics or experts, rather than core members of a social entity. Critics stand outside the social entity and hence, are not invested in a gatekeeping role. For instance, critics are motivated to embrace novelty because failing to identify new directions within a social entity may compromise their professional standing (Cattani et al. 2014). By contrast, as our study suggests, because gatekeeper evaluators are much more invested in a social entity, their admission decisions are informed by identity considerations and the repercussions for the evolution of the social entity.

Contribution to the Social Boundaries Literature

Social boundaries define membership in social entities and thereby, proscribe who is entitled to be a member and has access to resources, opportunities, and decision making (Lamont and Molnar 2002). Given these stakes, actors expend effort to create, expand, reinforce, or remove boundaries, activities that can be labeled as boundary work (Gieryn 1983, Arndt and Bigelow 2000, Zietsma and Lawrence 2010, Langley et al. 2019). Boundary work can be conducted by both insiders and outsiders and is often aimed at defending or contesting the inequalities constituted by social boundaries.

Prior work on boundary maintenance, or the defending of boundaries (Langley et al. 2019), has pointed to the rhetorical and discursive tactics that incumbents use to stabilize the boundaries of the social entity (Burri 2008, Garud et al. 2014, Delmestri et al. 2020), often in situations of change or exogenous threats. Our work investigates a more material tactic: the policing of membership (Lawrence and Suddaby 2006, Grodal 2018, Coslor et al. 2020), meant as the physical admittance of members as a means of ongoing boundary maintenance. Our work details a previously undocumented mechanism. The accreditors in our context make a political calculation in maintaining the boundary of their discipline—a form of "commons" belonging to all members (Barnett and King 2008, p. 1150). Influential yet ill-fitting candidates may prove disruptive to the remit, practices, and identity of a discipline and in the worst case, may damage the overall external evaluation of the discipline. For this reason, these candidates are prevented from joining in the first place.

A wider implication of our study is that, from the boundary maintenance view, the definition of accreditation as a process purely focused on quality assessment through which "actors are measured against an absolute standard" (Graffin and Ward 2010, p. 333) may be incomplete. When evaluators act as gatekeepers—typically a peer-directed process—accreditation may be better understood as a boundary maintenance exercise; actors who may threaten the boundaries of the social entity under consideration are stopped at the gate. This type of boundary work based on the physical selection of bodies is silent and not immediately visible to outsiders; compared with discursive and rhetorical work, it avoids open conflict and contestation both internally to the entity and toward the outside. At the same time, it defines in a noncompromising manner who is in and who is out. In this sense, it serves a similar purpose to the normalizing boundary tactics sometimes pursued by high-status groups that shrug off challenges to the integrity of their entities by continuing with their practices as normal and demonstratively assuming the natural rectitude of current boundaries (Helfen 2015, Bucher et al. 2016, Langley et al. 2019). Boundary maintenance by policing membership is likely to complement these

defensive tactics by implicitly taking a longer-term perspective on the reproduction of the entity.

Our findings help explain why social entities tend to remain stable in spite of constant members' turnover and fast-changing contexts and contents—like in science. The centripetal processes underlying stability are social in nature and involve insiders with their own interests (Durand et al. 2017). Much like Barolo winemakers resist changes in meaning that threaten their collective identity (Negro et al. 2011), scientists seek to maintain the boundaries of the discipline to which they belong. Yet, comparing the study of Negro et al. (2011) with our study, the threats are of a different nature. Winemakers are insiders who are wary of being partially associated with foreign categories; in our study, the threat comes from (unfocused) outsiders applying to become members. Although it may be that "spanning by new producers … is much less threatening than defection by insiders" (Negro et al. 2011, p. 1454), we do find evidence that incumbents guard themselves against threats from the outside.

One may surmise that the relative stability introduced to an entity via boundary maintenance is not without risk; valuable (high-performing) recruits may be left at the door, curtailing potentially beneficial evolutions of the social entity. New ideas and viewpoints may be discriminated against, reducing creativity and innovation (Burt 2004). In science, for instance, multidisciplinarity may be a vehicle for generating new discoveries, leading to more impactful science (Fini et al. 2022).

More generally, in fast changing contexts in which entities compete for rare resources, such as attention by policy makers and other stakeholders, boundary maintenance as documented in our study may slow innovation and adaptation to environmental changes and if not tempered, may even threaten the survival of the entity. Although our study has focused on evaluators' preference for stability, future research could study the circumstances, such as crises or environmental turbulence, in which centrifugal forces may trump the desire to preserve the status quo.

Comparison with Prior Literature on Evaluation in Professional Contexts

Prior literature has pointed to alternative mechanisms that may be in play in professional evaluation contests. In particular, authors have noted that unfocused candidates may be seen as violating established norms, including norms of professional purity and loyalty. Purity arguments have been advanced to explain cohesion within professions and occupations as well as stratification both within and between them (Abbott 1988). Derived from the distinction between the sacred and the profane in Durkheim (2008), this line of reasoning posits that members of a profession are judged based on their level of professional purity. Purity,

however, is not achieved by focusing on a single discipline but rather, by staying away from menial and practical "nonprofessional" issues (Abbott 1981, p. 823). For a scientist, being multidisciplinary does not mean to busy oneself with activities tangential to science and thereby, sully the profession but means to bring together multiple bodies of scientific knowledge. Multidisciplinarity per se does, therefore, not challenge professional purity; as Abbott (2001, p. 150) points out, it is "just a standing wave set up by the disciplinary system and coextensive with it." There is thus no reason to expect evaluators to penalize multidisciplinary candidates for violating purity norms and no rationale for explaining that past performance is associated with greater impurity.

Another set of expectations that multidisciplinary candidates may violate relates to norms of loyalty. Phillips et al. (2013, p. 1027), for instance, find that corporate clients of law firms interpreted the provision of services to individual plaintiffs as a form of "betrayal." Perceptions of disloyalty, the authors argue, arise in contexts of audience conflict: that is, "where two audiences have conflicting interests such that providing service to one audience necessarily implies lack of commitment to the other" (Phillips et al. 2013, p. 1050). This is a strong boundary condition that may rarely hold in academia; we would not assume that discipline-based peers—the audience in our case—would discriminate against multidisciplinary candidates because they are seen to serve competing audiences. Although disciplines may be in status competition with one another, they are part of the broader system of science that operates under shared norms and interests (Merton 1973). Because conflicts of interest of the kind documented with corporate law firms are rather improbable across academic disciplines, the betrayal argument is unlikely to significantly explain our findings.

Prior research has also found that high-status actors may under certain conditions be regarded with suspicion by audiences. Hahl and Zuckerman (2014) argue that high-status actors may be denigrated because they are seen as inauthentic and selfish. Specifically, Galperin et al. (2020) find that hiring managers apply a penalty to highly capable candidates because they perceive them to be less committed to the organization and posing a flight risk. Such risks are, however, limited in our context as academic candidates are unlikely to use an affiliation with one discipline as a means to later move to another discipline (recall that our focal evaluation only establishes hirability in a discipline).

Our discussion suggests that what may pass as normative, or even moral, violations (relating to lack of purity, loyalty, or authenticity) may be reformulated—within the boundary conditions of our theory—in terms of threats presented to the social entity by the candidate;

multidisciplinary candidates and notably, those who are influential players threaten the identity of the discipline and its knowledge domain, menacing the social identity and scientific jurisdiction of the evaluators.

Conclusion

We show how in an accreditation contest, an unfocused identity represents a liability, particularly for high-performing candidates, because evaluators act as gatekeepers intent on maintaining the boundary of the social entity they are representing. We thereby propose an alternative explanation underpinning the categorical imperative, which prior work has primarily attributed to evaluators' confusion or uncertainty about candidates' abilities.

Our results highlight the fundamental trade-off between conservatism and renewal inherent in accreditation processes. When accreditors act as gatekeepers, talented yet ill-fitted candidates are left out. Although this may not be an issue for thriving social entities, it may aggravate the condition of already struggling entities. To temper the behavior of overdefensive evaluators, the architects of accreditation processes may stipulate explicit "positive discrimination" guidelines, allowing greater acceptance of talented applicants even though they do not fit the conventional profile expected within a social entity. Accreditation guidelines may define criteria to help decision makers weigh the benefits of innovation against the risks of disruption. Ensuring a diversity of profiles within accreditation panels, including evaluators less typical of the social entity, may facilitate the acceptance of talented yet unfocused candidates. Including a subset of accreditors who are not directly invested in the status quo may also help to address the conservatism inherent in the process.

Endnotes

[1] By "quality," we refer to socially contingent judgments made by evaluators about the value of the candidates they assess. Although quality may appear to evaluators as a function of purely objective conditions, we do not make such an assumption (see Zuckerman 2012 for a discussion of the socially constructed nature of evaluations).

[2] Accreditation is at times referred to as "certification" (Sine et al. 2007, Carlos and Lewis 2018).

[3] Our argument relates to the interaction of candidate focus and imputed quality, not the (direct) effect of focus. There is ample evidence that multidisciplinary candidates find it challenging to be welcomed as suggested by work on outsider derogation and in-group favoritism in social psychology (Tajfel and Turner 1979) and sociology (Lamont and Molnar 2002).

[4] Examples are 01/A1: Mathematical Logic and Complementary Mathematics and 01/A2: Geometry and Algebra. These "two-digit" disciplines were nested into 14 larger ("one-digit") disciplinary domains (e.g., 01: Mathematics and Information Technology and 02: Physics).

[5] The full professors on the evaluation panels had on their part historically been recruited or promoted by their universities in a similar way via discipline-specific valuation panels composed by five senior professors, with the exception that the panel members were drawn locally from the respective universities. This means that the accreditation evaluators had been admitted to the discipline on the basis of a similar process, with the exception that it had been local rather than national.

[6] See https://abilitazione.miur.it/public/candidati.php?lang=eng (accessed March 30, 2020).

[7] See https://clarivate.com/products/web-of-science (accessed March 30, 2019). The impact factor of a journal is calculated as the sum of citations in a given year to articles published in the journal in the two preceding years divided by the number of articles that appeared in the journal in the two preceding years. The impact factor is available from 1997 onward. All our measures are based on WoS-indexed journals only.

[8] We thank a reviewer for suggesting this label. Disciplinary match compares candidates and audience in the same measure (see Zuckerman 1999).

[9] See http://cercauniversita.cineca.it (accessed March 14, 2022).

[10] All tables and figures prefixed "A" are included in the e-companion.

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