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## Testing the spread of status value theory

Lisa Slattery Walker<sup>a,\*</sup>, Murray Webster Jr.<sup>a</sup>, Alison J. Bianchi<sup>b</sup>

<sup>a</sup>University of North Carolina – Charlotte, Department of Sociology, 9201 University City Blvd., Charlotte, NC 28223, United States

<sup>b</sup>University of Iowa, Department of Sociology, W118 Seashore Hall, Iowa City, IA 52242, United States

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### ABSTRACT

How can a nominal descriptive term acquire status beliefs and definitions giving it connotations of differential social worth and competence? Cecilia L. Ridgeway and her associates have developed one theory explaining such effects. Recently Joseph Berger and Hamit Fişek offered a new theory using different mechanisms. We report the first experimental tests of the new theory. One mechanism describes spread of status value through referent individuals who possess both nominal and status characteristics. A second mechanism predicts spread of status value directly from status elements including education and income, without intervening referent actors. Results show that both mechanisms can create positive and negative status value for a nominal characteristic as predicted.

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### 1. Introduction

Everyone who studies inequality probably has wondered what gives status characteristics their special significance. What makes differences of *gender, age, speech patterns, education, race, height, beauty, income, problem solving ability* and many other characteristics invidious rather than being simply descriptive? The distinctions not only place people into groups; they also connote social worth and competence. In some cases, they organize micro interaction and perpetuate macro inequality.

Much of contemporary sociology studies advantages that socially significant categories confer on some and withhold from others.<sup>1</sup> One large research program studies “status generalization:” a macro to micro process in which societal *status characteristics* affect *performance expectations* that, in turn, affect *power and prestige structures* of certain face to face groups and teams. Recent developments in this program address how status characteristics can be created from nominal distinctions; for instance, how *gender* and *ethnicity* come to connote differential evaluations and task competencies instead of serving as simple descriptors. When a characteristic acquires status value, it becomes an element of the stratification system in its society and it often affects people's property and position.

Status characteristics are culturally defined, and they may change across cultures and within a culture across time. When society creates new occupational specializations their prestige is undefined; status value may come from comparable, existing occupations or from other associations. Ashkenazy and Sephardic ethnicity connote status differences in Israel (Yuchtman-Yaar and Semyonov, 1979), although most Americans would not recognize that difference nor would they attach social significance to it. Sexual orientation carries status connotations (Webster et al., 1998), though that distinction may have had no meaning in the 19th century. Motherhood carries status disadvantages today (Correll et al., 2007), though it might have brought advantages in previous times. How characteristics acquire, lose, and change status value are theoretical issues with wide applicability.

\* Corresponding author. Fax: +1 704 687 3091.

E-mail addresses: [lisa.walker@uncc.edu](mailto:lisa.walker@uncc.edu) (L.S. Walker), [mawebste@uncc.edu](mailto:mawebste@uncc.edu) (M. Webster), [alison-bianchi@uiowa.edu](mailto:alison-bianchi@uiowa.edu) (A.J. Bianchi).

<sup>1</sup> Classical scholars discussed the importance of such distinctions. Simmel ((1908), 1950, p. 307) wrote “The first condition of having to deal with somebody . . . is to know with *whom* one has to deal.” Weber ((1922) 1978) saw status, wealth and power as the fundamental societal hierarchies. Park (1928) described encounters as beginning with individuals classifying each other in terms of sex, age, and race.

Two different theories address ways that status characteristics may be created. The first was proposed by Ridgeway (1991), and a second by Berger and Fişek (2006). Below we report the first empirical tests of the Berger–Fişek theory.

Ridgeway's (1991) theory has been verified, extended, and refined, and is now called "Status Construction Theory" (Ridgeway, 1991, 2006, 2007, 2009, forthcoming; Ridgeway and Balkwell, 1997; Webster and Hysom, 1998; Ridgeway et al., 1998; Ridgeway and Erickson, 2000; Ridgeway and Correll, 2006). As an instance of the theory's usefulness, Ridgeway (1997) applied it to the creation and persistence of gender inequality in organizations, and Mueller et al. (2002) verified parts of that analysis in a field study of agricultural workers in Kenya.

Ridgeway has always emphasized that Status Construction Theory does not describe the *only* way that a characteristic can acquire status value.<sup>2</sup> The Berger–Fişek theory begins with a different set of initial conditions and describes different mechanisms than Status Construction Theory. A detailed comparison of the two approaches is beyond our scope; Berger and Fişek (2006, pp. 1041–1043) outline some comparisons. The two approaches are complementary and together they give a more nearly complete description of how status characteristics may come into being.

We first describe the general (or "core") theory of status generalization processes. Following that, we present additional ideas of the Berger–Fişek theory. Then we describe our experimental tests of its mechanisms for creating new status characteristics and discuss some implications of the work.

## 2. Definitions, the core theory of status generalization, and new assumptions

The core *status characteristics theory* or SCT (Berger et al., 1977) describes how status characteristics can create *performance expectations* that affect interaction patterns and hierarchical structures of task focused small groups. Thus status inequality in a society can affect interaction inequality and the structure of face to face groups through the mechanism of creating task-specific performance expectations for group members. The general theory has developed through efforts of many researchers over several decades, and has been used for theoretical analyses, applications, and interventions to combat undesirable generalization.<sup>3</sup>

Status generalization occurs within scope conditions, of which *task focus* (individuals want to find "right" or "best" answers to problems) and *collective orientation* (everyone contributes to the effort) are most important.<sup>4</sup> Teams, committees, and juries are task focused; friends at a cocktail party ordinarily are not. If individuals are collectively oriented, social norms make it appropriate and necessary to consider each individual's problem solving attempts.<sup>5</sup> For assessing theoretical explanations and predictions, meeting scope conditions is crucial.<sup>6</sup>

SCT defines two types of status characteristics. A *specific status characteristic*, C, (1) has two or more evaluated states; (2) that carry specific performance expectations. Many performance accomplishments meet the definition of a specific status characteristic, including being a champion chess player, a marathon runner, and a Sudoku ace. That is, (1) social definitions make it desirable or more admired to be a champion than an ordinary player; and (2) people expect that those with the positively evaluated state of the characteristic can do certain things better than those with the relatively negatively evaluated state.

A *diffuse status characteristic*, D, meets parts (1) and (2) of the definition of a C, and in addition (3) it carries general performance expectations. If, for instance, social definitions include the notions that (1) "college graduates" are more esteemed than "high school graduates;" (2) college graduates have greater analytic ability; and (3) college graduates can do "most things" (without explicit limit) better than high school graduates; then education fits the definition of a diffuse status characteristic in that society.

For both specific and diffuse status characteristics, the theory describes how the evaluations and performance expectations can be "imported" to new interactions where they affect the power and prestige structure of the group. If, for instance,

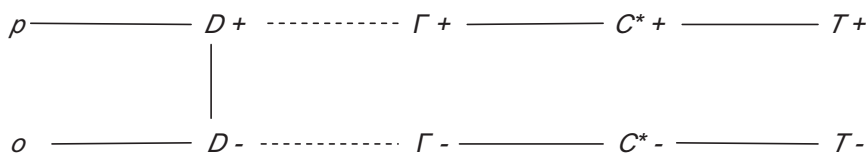
<sup>2</sup> Ridgeway (1991, p. 369) noted: "My intention is to indicate structural conditions that are *sufficient* to cause a nominal characteristic to acquire status value and to describe the processes these conditions engender. These conditions and processes are neither unique nor *necessary*."

<sup>3</sup> Theory and research in status generalization often are traced to Berger et al. (1966), although earlier papers exist. Wagner and Berger (2002), Webster (2003), and Berger and Webster (2006) provide summaries and intellectual histories of the programs. Theoretically based applied work on status processes has been conducted for several decades. Cohen and Lotan (1997) developed a large program of interventions to overcome undesirable status generalization. Other applied research includes Entwisle and Webster (1976), Webster and Driskell (1978), Lucas and Lovaglia (1998), Goar and Sell (2005), and Ridgeway and Correll (2006).

<sup>4</sup> Status characteristics and expectation states has been called a "theoretical research program" composed of shared orientations, unit theories, and common research designs. Often, unit theory development leads to removing or modifying the significance of one or another scope conditions. For instance, Berger and Fişek (1974) listed seven scope conditions for their generalization of the Status Characteristics theory, including (a) that at least one status characteristic discriminates between actors; (b) that the task is unitary; (c) and that the actors may possess any number of status characteristics for a status organizing process to occur. Condition (a) was removed when salience was expanded to include characteristics that are relevant to the task (see Berger et al., 1977), and condition (b) was removed by the extension of the theory to complex task structures (Fişek, 1991). While condition (c) still obtains, its significance has changed since the extension of status organizing theory to also cover situations where no status characteristic possessed by actors is salient (Fişek et al., 1991). However, task focus and collective orientation are part of the scope conditions of every theory that we know of in the program.

<sup>5</sup> Collective orientation does not require accepting everyone's inputs, only that all inputs must be considered. Individuals cannot, that is, ignore anyone's suggestions, and they must resolve disagreements that arise. Requiring unanimity in a jury, for instance, enforces collective orientation.

<sup>6</sup> Scope conditions are a set of sufficient conditions under which a status organizing process is predicted to occur. Status organizing processes may also occur in situations that are outside of the scope conditions stipulated here as, for example, in the case mixed-motive situations (Thye, 2000) and in the case of Foschi's application files research (2006) where "collective orientation" does not obtain. Berger (1974), Walker and Cohen (1985), Foschi (1997), Foschi and Lapointe (2002), and Shelly, (2002) provide discussions of scope conditions in sociological theory and research.



Core Status Generalization Process

- p, o = interactants (person and other)
- D = diffuse status characteristic
- Γ = general performance expectations
- C\* = task-specific performance expectations
- T\* = immediate group task

Fig. 1. Basic status generalization process.

college graduates on a jury are encouraged to participate more, are allowed greater influence over the verdict, are more likely to prevail in cases of disagreement and are more likely to be chosen foreperson than high school graduates, those effects may have been produced by status generalization from the diffuse characteristic education.

Five assumptions describe how status generalization proceeds. Briefly, the core theory describes a process with five mechanisms<sup>7</sup>:

1. *Salience of status information.* All status characteristics differentiating actors, or already believed relevant to their task, become *salient* or socially significant for the interaction.
2. *Generalization of task-specific performance expectations.* Unless a characteristic is known to be irrelevant, actors treat it as relevant and generate performance expectations having the same evaluations as the states of the characteristics.
3. *Structure completion and persistence.* Status generalization continues according to processes described in (1) and (2) until all actors are linked to task outcomes (success and failure) through expectations formed from all available status information. If actors leave the situation, other elements of the structure remain, and if actors enter the situation, the processes in (1) and (2) will recur as before.
4. *Aggregating status information.* All salient status information is combined according to a precise mathematical function to yield overall or aggregate performance expectations associated with each actor.<sup>8</sup>
5. *Translating expectations to behavior.* Once aggregate performance expectations are associated with each actor, most subjective impressions and behaviors reflecting subordination and superordination, as well as each actor's position in the group's power and prestige structure, are functions of each actor's expectation position relative to every other actor's position.

So status generalization is a process often activated in task focused collectively oriented groups. Group members notice all sorts of status characteristics that differentiate them, and they infer performance expectations for the skills needed to succeed at the group task. Once expectations are associated with individuals, those expectations govern ideas of skill, inequality behavior, and the hierarchical group structure. Societal inequality (status) is reproduced in small groups (power and prestige) because status creates performance expectations.

Status inequality in society → Unequal task – specific performance expectations  
 → Unequal power and prestige hierarchies in small groups

A prior step is to understand what creates the status characteristics that compose the inequality in society. Presenting and testing predictions from new ideas about that process is the main focus of this report.

A signed, undirected graph may be written as a model of the theory. The model is a useful visual representation of status situations and it gives the same predictions as the verbal and mathematical version.

Fig. 1 shows a graph model representation of the basic status generalization process described by the core theory. The initial situation is shown at the two sides, and includes the elements *p*, *o*, *D+*, *D-*, *C\*+*, *C\*-*, *T+*, and *T-*. *P* and *o* (person and other) are actors, and they possess different states of a diffuse status characteristic *D*. For instance, *p* might possess a

<sup>7</sup> We present the ideas somewhat informally. Detailed and rigorous presentations of SCT are available in Berger et al. (1977), Webster et al. (2004), and Webster and Rashotte (2010).

<sup>8</sup> The function of Assumption 4 is presented below in calculating point predictions for experimental tests.

college degree while  $o$  has only a high school diploma. The vertical line connecting states  $D+$  and  $D-$  is negative, representing the fact that possessing one state precludes possessing the other state. Because the situation is task focused, it includes the idea of success ( $T+$ ) and failure ( $T-$ ), as well as the idea of a specific characteristic ( $C*$ ) that is relevant to success or failure.

The theory predicts that the status characteristic  $D$  will induce corresponding general performance expectations  $T+$  and  $T-$ , and that those will be seen as relevant to the specific task ability  $C*+$  and  $C*-$ . For instance,  $T+$  represents an idea that “college graduates can do most things better than high school graduates,”  $C*+$  might represent “maybe one thing college graduates can do better is this group’s specific task.” This is the process of status generalization. Of course many situations require much more complex graphs; however the structure completion process just described is used to analyze them and predict beliefs and behavior.

### 2.1. New assumptions for spread of status value

Sociological interest in spread of status value can be traced as far back as Veblen (1899). Most of the recent work on the spread of status value begins with a theoretical paper by Berger et al. (1972) who argued:

**Assumption 1 (Spread of Status Value).** Let  $e_i$  be a non-status valued element of a status situation  $S$ , and let  $e_j, e_k, \dots$  be status-valued elements of  $S$ . If  $e_i$  is related to  $e_j, e_k, \dots$ , or  $e_j, e_k, \dots$  to  $e_i$ , then (1)  $e_i$  acquires the status value of  $e_j, e_k, \dots$ , if  $e_j, e_k, \dots$ , have the same status value; (2)  $e_i$  acquires no status value if  $e_j, e_k, \dots$ , have different status values (Berger et al., 1972, p. 130). More simply, an element lacking status value can acquire status value from already-valued elements if and only if those elements share the same status value. If they differ in status value, this assumption predicts that no status acquisition will take place.<sup>9</sup> In an important paper, Thye (2000) built on the above assumption. He developed a theory of how differences in actors’ status can lead to differences in the status value of their resources, such as social objects, which in turn lead to their differences in power, i.e., the ability of actors in different positions of power to acquire resources in an exchange situation. Thye (2000) argued that a necessary condition for this process to unfold is that the unevaluated element be explicitly relevant to the evaluated element, where “relevance” is defined as “if  $x$  possesses  $e_i$ , then  $x$  is expected to possess  $e_j$ ” (Berger et al., 1972).

In 1991 Ridgeway published a theory of status construction. In this theory, “doubly dissimilar” situations can lead to unevaluated social categories acquiring status beliefs.<sup>10</sup> Doubly dissimilar situations are those in which one category (call it  $N_A$  for one state of an unevaluated nominal characteristic) is regularly found in association with differences in resources such as wealth. Suppose someone repeatedly encounters people of category  $N_A$  who have high resources, and also encounters people of category  $N_B$  who have low resources. Resource differences can lead to differences in a group’s interaction hierarchy; that is, individuals having greater resources occupy more favorable positions in the power and prestige hierarchies of encounters. Repeated experiences with doubly dissimilar situations lead to states of  $N$  acquiring status beliefs through the mechanism of regular, repeated interaction inequality. Many subsequent theoretical and empirical papers develop Status Construction Theory and its evidential base; Ridgeway (2006) and Ridgeway et al. (2009) summarize recent developments.

Ridgeway and Erickson (2000) reported two experiments assessing a main mechanism of status construction; namely, interaction encounters involving differential standing in the power and prestige order. This research showed clearly that unequal interaction can create status beliefs, and under specified conditions, will attach those beliefs to a previously unevaluated characteristic. The creation of status beliefs can occur from interaction inequality, even without a resource difference to start the process.

In Ridgeway and Erickson’s Experiment 1, participants were assigned different states of a nominal characteristic  $N$ , with no resource differences. They were then put into high and low interaction hierarchy positions through experimental manipulations. As predicted, the interaction inequality led to development of status beliefs associated with the states of  $N$ , even though there were no resource differences. Results confirmed the importance of the interaction mechanism for producing status. Their Experiment 2 was similar, except that here the participants observed referent others with whom they shared states of  $N$  and who were placed into either high or low positions in the interaction hierarchy. Again, participants developed status beliefs attached to the states of  $N$  through the interaction mechanism. Since participants here shared states of  $N$  with the observed referent others, they also associated the induced positive and negative status beliefs with themselves.

Berger and Fişek (2006), further develop ideas in Berger et al. (1972) and Thye (2000). These authors apply arguments on spread of status value to the problem of the construction of new diffuse status characteristics. Their theory describes how unevaluated states of a discriminating characteristic become evaluated. Further, the theory describes how, as a consequence of those status evaluations, states of generalized expectations become associated with these status states in a consistent manner, and how status behaviors such as influence are direct functions of differences in expectation states. This theory is the foundation for our work here.

<sup>9</sup> The authors’ example is a bathroom key in an organization. It acquires status value if only executives are issued a key. It does not acquire status value if all employees are issued a key.

<sup>10</sup> For explications of status construction theory, please see Ridgeway (1991, 2000). Webster and Hysom (1998) analyzed some aspects of that theory and suggested possible extensions. Berger and Fişek (2006, p. 1041–1043) outline differences in the core processes of Ridgeway’s status construction theory and their spread of status value theory. Those authors (Berger and Fişek 2006, p. 1042) make the important point that “...[W]e do not conceive of these two formulations [status construction and spread of status value] as describing conflicting processes. However because they involve different core processes, they are likely to be applicable to different situations.”



The Berger and Fişek (2006) theory has several differences from both of the earlier theories. Thye's theory addresses the creation of value of resources and of power; it further explains unequal outcomes of negotiation as a consequence of power differences. It does not deal with the acquisition of status value of initially non-valued states of a discriminating characteristic. Also, it does not deal with the issue of how the valuation of those initially non-valued states of characteristics leads to the induction of general performance expectation states consistent with the status valuations of those states. And it does not address how such expectation states, in turn, are directly related to influence behavior. The key mechanism in Ridgeway's Status Construction Theory is interaction (influence) inequality; that unequal interaction is what creates status beliefs and, subsequently, power and prestige inequality. The Berger–Fişek theory does not employ an interaction mechanism to explain creation of status beliefs, nor does it address, as status construction does, the diffusion of status beliefs through a population. Overall, while there are similarities of topic in the three theories, they are quite different in their structures, mechanisms, and in the sorts of questions they address. We turn to describing processes in the Berger and Fişek (2006) theory that are the foundation of our work here.

The process begins with  $N$ , a *nominal characteristic*.  $N$  has distinct states  $N_A$  and  $N_B$ , but the states are unevaluated and they carry no performance connotations. If  $N_A$  and  $N_B$  acquire differential evaluations and specific and general performance expectations,  $N$  functions as a *diffuse status characteristic*. So the theory must account for how that might happen. The Berger and Fişek (2006) theory adds assumptions to the core set to account for transforming a nominal characteristic to a status characteristic. We use two of the new ideas in our tests.<sup>11</sup>

1. If states of an initially non-valued characteristic  $N$  are connected directly or indirectly to positively or negatively evaluated states,  $N$  will acquire status value at a level determined by the number and length of its links to the valued states.
2. As status value spreads to states of  $N$ , high and low general performance expectations  $\Gamma$  become more and more closely associated with states of  $N$ . Those general expectations become associated with task-specific performance expectations  $C_*$ , the same as for existing status characteristics.

The status acquisition process implied by these new principles then links to the five assumptions of the core theory. When  $N$  acquires status value, it will have the same ability to organize behavior as existing status characteristics such as gender, race, or education have. We study two ways that a nominal characteristic  $N$  might acquire status value. Both ways are instances of the general process described above.

Imagine two actors,  $p$  and  $o$ , engaged in a collective task.  $p$  and  $o$  are differentiated by a single nominal characteristic  $N$ ; for instance,  $p$  possesses  $N_A$  while  $o$  possesses  $N_B$ . We believe that  $N$  can acquire status value through either of two routes.

First,  $N$  might be indirectly linked to existing status through referent actors who possesses both a particular state of  $N$  and a particular state of a recognized status. In this case we predict that status value spreads through the referent actors to the nominal characteristic and  $N$  will acquire the same value as the existing characteristic. If  $p$  possesses  $N_A$  and  $o$  possesses  $N_B$ , and referent actors possessing  $N_A$  have high status on some other dimension while referents with  $N_B$  have low status, then  $p$  and  $o$  will treat the  $N_A/N_B$  distinction the same as they would treat, say, educational differences.

Second,  $N$  could be linked directly to other status elements, including status characteristics and reward outcomes that are connected to task performance. In this case we predict that status value will spread directly from those elements to  $N$ , without intervening referent actors. Again, if  $p$  possesses  $N_A$  and  $o$  possesses  $N_B$ , then both of them will treat that distinction the same as if  $p$  possessed high status and  $o$  possessed low status on some existing characteristic such as education.

Once a nominal characteristic acquires status value, the second new assumption says that it will create general performance expectations that link to task specific performance expectations. The ability of  $N$  to affect interaction depends on the number and relevance of the connections. As this is the first test of new mechanisms, we make the links as strong as possible to assess whether the processes the theory describes actually can create status value. We leave for future work the task of assessing the theory's predictions of varying effects of the process.<sup>12</sup> We anticipate that our procedures will transform a nominal characteristic into a status characteristic, so that Fig. 1 will describe the effects of the  $N_A/N_B$  distinction if  $N_A$  replaces  $D+$  and  $N_B$  replaces  $D-$ .

### 3. Materials and methods

We assess the spread of status value in a basic experimental design that has been adapted for many tests and extensions of theories of status generalization. It is described by Berger (2007) and by Webster et al. (2004).<sup>13</sup> It consists of two parts or phases. Roughly speaking, phase 1 creates scope and initial conditions and introduces the independent variables. Phase 2 measures predicted effects on dependent variables. Scope includes task focus and collective orientation. Initial conditions include interaction conditions and operational instances of the experimental design. Independent variables include the nominal

<sup>11</sup> We state assumptions less precisely than do Berger and Fişek. A third new assumption of theirs, not used here, deals with stability of newly created status characteristics.

<sup>12</sup> We invite interested readers to the discussion in Berger and Fişek (2006, p. 1049–1050). Those theorists predict that  $N$  will be connected to  $\Gamma$  by a line of variable length  $l$ , with  $l$  a function of the status value of other information. A function to predict  $l$  was first reported by Fişek, Berger and Norman (2005). Exploring mathematical properties of  $l$  and assessing its empirical determinants and effects are important tasks for future research.

<sup>13</sup> Experimental procedures are available on request from the authors.

distinction and other information by which status value may spread to the nominal characteristic. Dependent variables include measures of predicted task specific performance expectations (both behavior and questionnaire responses), and predicted status beliefs associated with the new status characteristic (questionnaire measures).

Our design has four conditions. In all, we predict that we will create status value and attach that to a nominal characteristic, thus making it function the same as a diffuse status characteristic. In conditions 1 and 2, the nominal characteristic is associated with referent actors who previously have attained success or failure at another task. In conditions 3 and 4, we associate the nominal characteristic directly with existing statuses and reward outcomes. In conditions 1 and 3 we try to create positive status value and thus predict that  $p$  will behave as a status superior to  $o$ . In conditions 2 and 4 we predict that  $p$  will behave as a status inferior to  $o$ .

We scheduled paid volunteers for “a study of group interaction,” and brought them to individual rooms in the laboratory, each fitted with a TV for presenting instructions and a computer monitor for responding to the tasks. Participants, women between the ages of 18 and 20, were recruited from large lecture classes using standard procedures.<sup>14</sup>

Besides the scope conditions task focus and collective orientation, the situation includes several initial conditions. Actors see no differences between them except for a single unevaluated nominal characteristic  $N$ . To create a nominal distinction, we adapted a procedure that Ridgeway has used, adapted from Tajfel et al. (1971). Participants are shown a series of slides, each containing reproductions of two paintings, and they are asked to indicate their preference on each one. The paintings are not identified, although one of each pair is by Paul Klee and the other is by Wassily Kandinsky. At the end, participants are told that the set of responses of one of them fits a particular pattern,  $S_2$ , while the other's responses fit a different pattern,  $Q_2$ . The  $S_2/Q_2$  classification is not linked to either kind of painting, and its deliberately abstract quality makes it unlikely that it confers any evaluative connotation; that is,  $S_2/Q_2$  is purely nominal.

In conditions 1 and 2 we introduce the first route by which status value spreads, through referent actors who possess both a nominal characteristic and the valued success or failure outcomes on a specific task. We tell participants that we have a considerable amount of research on the  $S_2/Q_2$  difference, we will report some findings. Many other individuals, we tell them, have participated in two-person teams similar to the one we study today. Many earlier teams worked on a task called “Lost on the Moon” or “Moon Survival.”<sup>15</sup> That task asks participants to rank items in order of importance for the survival of marooned astronauts. Interestingly enough, we say, we have found that the  $S_2/Q_2$  classification seems to be associated with success at that task. That is, the  $S_2/Q_2$  distinction is linked to task outcomes. Of the last eight people in our research, those classified  $S_2$  did very well at the moon task, while those classified as  $Q_2$  did very poorly. Results are consistent across previous groups, even though their members are equated on age, education, and other characteristics. The only thing that differentiates them is the  $S_2/Q_2$  distinction. We show them a chart repeating this information, including individual scores of the eight supposed previous participants (with names blacked out) on the moon survival task. Thus states of  $N$  that our participants have been told they possess are possessed also by eight referent others, and the referent others are linked reliably to either success or failure at Lost on the Moon. In conditions 1 and 2 we predict that status value will spread from specific valued outcomes on the moon survival task through the referent actors to the states of  $N$  and give it status value and behavioral consequences as a new status characteristic.

In conditions 3 and 4, we link states of  $N$  directly to accomplishments and rewards without an intervening link through referent actors. Here we predict that status value will spread directly from those other accomplishments and rewards to states of the nominal characteristic. In these conditions we also tell participants that we have a great deal of information about the  $S_2/Q_2$  distinction, only this time the information comes from demographic research on the two groups. People classified as  $S_2$ , we say, are known to be more likely to complete advanced educational degrees, to move into high prestige jobs, to do well at several kinds of problems (word problems, arithmetic problems, and Sudoku), and to earn high salaries. People classified as  $Q_2$  seem to be associated with negative outcomes in those areas. In conditions 3 and 4 we predict that status value will spread directly from those other status elements to states of  $N$ .

That information completes the phase 1 manipulation of independent variables. At the end of phase 1 we ask participants to complete questionnaires of status beliefs associated with  $S_2$  and  $Q_2$ , along with other questions designed to assess our success at creating the needed scope and initial conditions. These questionnaire results are described below. Next we turn to phase 2 where we test predictions that states of  $N$  will have acquired performance expectations and affect behavior as do other status characteristics.

For phase 2 we described a collective task that  $p$  and  $o$  would be asked to work on. Here, participants are asked to judge a series of slides, each one containing two patterns that resemble large checkerboards with complex patterns of black and white rectangles. Judging correctly requires “contrast sensitivity,” described as a newly discovered ability that some people possess and others do not. For each slide, the task is to decide whether the top pattern or the bottom pattern contains more white area. The judging task has two stages. As each slide appears, both participants study it and then record an “initial choice” that is transmitted to their partner. Following re-study, both record a “final decision” that is not shared with the

<sup>14</sup> This theory makes the same predictions for women and men. Choosing women rather than men for the experiments was dictated by practical considerations. More women than men volunteered for the work, and in our experience women have been more conscientious about showing up for their appointments. During our project, Ridgeway et al. (2009) reported that women acted on new status beliefs less readily than men did, possibly because women face social risks from acting on unclear status information. In our experiments the women acted on the status information provided. We cannot assess whether men might have responded more strongly, but we have no reason to think that they might have.

<sup>15</sup> Johnson and Johnson (2008) present this and many other exercises for team building and other group uses.

**Table 1**  
Conditions and predictions for the spread of status value experiment.

Condition	Nominal distinction	Operational distinction	Given links of <i>N</i>	Predicted expectations
1	<i>p</i> : $N_A$ <i>o</i> : $N_B$	<i>p</i> : S2 <i>o</i> : Q2	Four referent <i>o</i> 's linked to task success/failure	$p > o$
2	<i>p</i> : $N_B$ <i>o</i> : $N_A$	<i>p</i> : Q2 <i>o</i> : S2	Four referent <i>o</i> 's linked to task success/failure	$o > p$
3	<i>p</i> : $N_A$ <i>o</i> : $N_B$	<i>p</i> : S2 <i>o</i> : Q2	Five statuses and 1 reward	$p > o$
4	<i>p</i> : $N_B$ <i>o</i> : $N_A$	<i>p</i> : Q2 <i>o</i> : S2	Five statuses and 1 reward	$o > p$

partner. We emphasize collective orientation by telling them that research shows that individuals can markedly improve their scores if they take advantage of the advice and information of their partner's initial choices. Because communication is controlled, we introduce disagreements on 23 of the 25 trials and record the proportion of disagreements resolved in favor of self, or  $P(s)$ , as the behavioral measure of performance expectations.<sup>16</sup> Rejecting influence is one component of behavioral inequality in a task focused group. The higher the expectations an interactant holds for self relative to other, the higher that person's  $P(s)$ .

Following the contrast sensitivity disagreement trials, we asked participants to complete a second questionnaire. This one also contains questions to assess our success at creating initial and scope conditions, and several questions that provide an alternate measure (to the  $P(s)$  behavioral measure) of performance expectations for contrast sensitivity. Following that, we interviewed each participant individually to assess all of those factors; to explain the experiment fully, including its design, deceptions and reasons for them; and to answer any questions that a participant might have. Following the interview, we paid them and thanked them for their participation and accompanied them to the hallway outside the office complex.

Table 1 shows the conditions of our experiment. If the extended theory is correct, participants will form status beliefs regarding states of  $N$  and those status beliefs will be reflected in status belief questionnaire responses. Further, status generalization will create performance expectations for contrast sensitivity based on the characteristic  $N$ , and those will be reflected in disagreement resolution behavior and also in expectations questionnaires.

Note that participants have no reason to form status beliefs or performance expectations for self and other except for the theoretical processes. All that they know about each other is their different artistic preferences. They do not know, for instance, each others' majors, or anything about anyone's task abilities. They encounter each other for the first time in the experiment; they have never encountered the S2/Q2 distinction before, and have not interacted over the contrast sensitivity task with anyone. Of course we tell them that their S2/Q2 difference is regularly associated with other social elements, but they are free to discount that association or to believe that it does not apply to them and their interaction. We test whether that information creates status value for the distinction as the theory predicts.

#### 4. Results

To assess success at instantiating scope and initial conditions, we used a combination of questionnaires and interviews. Some questionnaire items ask directly about task focus and collective orientation; others probe respondents' understanding of the nominal distinction and its associations with other information. When a questionnaire response indicated a potential problem, an interviewer followed up to be sure that we understood how the participant interpreted the situation. Rules that we have used in many experiments require *including* every participant unless (1) a participant states disbelief or misunderstanding of a scope or initial condition; (2) and reports adjusting her behavior by that belief or misunderstanding; and (3) a senior member of the research team listens to the recorded interview and concurs that an important condition failed. Using those criteria, we excluded three cases from condition 1, six from condition 2, two from condition 3, and eight from condition 4, an overall exclusion rate of 15.8%, which is in line with our other experiments and those of other researchers.<sup>17</sup> Data analyses refer to the remaining 101 participants.

As noted, we collected data on status beliefs associated with the S2/Q2 distinction using a questionnaire at the end of phase 1 of the experiment. To measure status beliefs, we adapted items that Ridgeway and colleagues have used (Ridgeway et al., 1998; Ridgeway and Correll, 2006; Ridgeway et al., 2009). The questions ask respondents to assess S2s and Q2s on dimensions of status.<sup>18</sup>

Following Ridgeway and colleagues, we asked the questions two ways, as what "Most people" believe about S2s and Q2s, and what "I personally" believe about S2s and Q2s. The "most people" phrasing captures the social reality nature of status

<sup>16</sup> Foschi (1996) and Troyer (2001) have developed comparable contrast sensitivity programs for laboratory use.

<sup>17</sup> Reasons for exclusions were: failure of collective orientation, 10; failure of task focus, 1; having prior ability expectations, 2; suspicion regarding the experimental manipulations, 3; and disbelief of initial conditions, 3.

<sup>18</sup> Ridgeway and her colleagues often use three scales (status, competence, and social) and four items for each. We focus on the first two scales, status and competence, as most directly related to our predictions. We used only two items for each: "high status" and "leader" for status, and "competent" and "knowledge" for competence. All items were rated on 7-point scales.



**Table 2**  
Status beliefs associated with states of *N*.

Items and response scales	Mean (s.d.)	<i>t</i> S2 ≠ Q2
<i>(1) What are the relative status positions of S2 and Q2 individuals?</i>		
<u>Most people</u> see the groups as having these positions on <u>status</u> :		
S2: low status 1 2 3 4 5 6 7 high status	S2: 5.64 (1.07)	12.44***
Q2: low status 1 2 3 4 5 6 7 high status	Q2: 3.34 (1.19)	
<u>I personally</u> see the groups as having these positions on <u>status</u> :		
S2: low status 1 2 3 4 5 6 7 high status	S2: 4.80 (1.02)	5.59***
Q2: low status 1 2 3 4 5 6 7 high status	Q2: 3.99 (0.89)	
<i>(2) What are the relative social roles of S2 and Q2 individuals?</i>		
<u>Most people</u> see the groups as having these positions on <u>social roles</u> :		
S2: follower 1 2 3 4 5 6 7 leader	S2: 5.59 (1.08)	11.39***
Q2: follower 1 2 3 4 5 6 7 leader	Q2: 3.14 (1.27)	
<u>I personally</u> see the groups as having these positions on <u>social roles</u> :		
S2: follower 1 2 3 4 5 6 7 leader	S2: 4.95 (1.20)	5.89***
Q2: follower 1 2 3 4 5 6 7 leader	Q2: 3.77 (1.11)	
<i>(3) Where do S2 and Q2 individuals stand on overall competence?</i>		
<u>Most people</u> see the groups as having these positions on <u>competence</u> :		
S2: incompetent 1 2 3 4 5 6 7 competent	S2: 5.66 (.94)	10.34***
Q2: incompetent 1 2 3 4 5 6 7 competent	Q2: 3.93 (1.28)	
<u>I personally</u> see the groups as having these positions on <u>competence</u> :		
S2: incompetent 1 2 3 4 5 6 7 competent	S2: 5.18 (1.07)	3.91***
Q2: incompetent 1 2 3 4 5 6 7 competent	Q2: 4.73 (1.15)	
<i>(4) Where do S2 and Q2 individuals stand on knowledge?</i>		
<u>Most people</u> see the groups as having these positions on <u>knowledge</u> :		
S2: not knowledgeable 1 2 3 4 5 6 7 knowledgeable	S2: 5.71 (0.98)	12.80***
Q2 not knowledgeable 1 2 3 4 5 6 7 knowledgeable	Q2: 3.58 (1.13)	
<u>I personally</u> see the groups as having these positions on <u>knowledge</u> :		
S2: not knowledgeable 1 2 3 4 5 6 7 knowledgeable	S2: 5.23 (0.95)	5.34***
Q2 not knowledgeable 1 2 3 4 5 6 7 knowledgeable	Q2: 4.65 (1.03)	

\*\*\* *p* < .001.

beliefs. The “I personally” phrasing may reflect endorsement of the social reality, though it also may be affected by self-presentation concerns such as “I want you to know that I consider everyone to be equal.”

Table 2 shows the questions and results. For all items, responses show the predicted status beliefs. S2s are more high status and more likely to be leaders than followers; they also are more competent and more knowledgeable. The differences are statistically significant and they appear for “most people” and for “I personally.” The differentiation was somewhat larger for “most people,” perhaps indicating that participants were hesitant to report that they themselves see S2s and Q2s as different. (Ridgeway et al. (1998, p. 49) reported a similar finding.)

Next we turn to behavioral predictions. If states of *N* acquire status value, then status generalization processes will cause formation of specific performance expectations for the contrast sensitivity task. We measure those expectations using *P*(*s*) behavior. We first calculate each actor's aggregate expectations and then translate expectations to predicted *P*(*s*).

Assumption 4 of the core theory (in Berger et al., 1977 or Webster and Rashotte, 2010) predicts aggregate expectations *e<sub>p</sub>* and *e<sub>o</sub>* associated with actors *p* and *o*, respectively. The precise combining function for expectations is:

$$f(i \cup j) = f(i) + f(j) - f(i)f(j),$$

where the *f*(*i*) values tell how much effect each status element has on expectations. We used *f*(*i*) estimates in Fişek et al. (1992), Berger et al. (1977) and Balkwell (1991) present alternative estimation procedures. All positive status information is combined according to that function; all negative information is similarly combined; and the results of the two combinations are summed to yield aggregate expectations for each actor. Finally, actor *p*'s “expectation advantage” is (*e<sub>p</sub>* – *e<sub>o</sub>*), which of course is positive in conditions 1 and 3, and negative in conditions 2 and 4.

Next, as in Assumption 5, we translate expectations to *P*(*s*) behavior for this particular experimental situation. Fox and Moore (1979) proposed an OLS model for this experiment:

$$P(s) = m + q(e_p - e_o).$$

In this model, *m* and *q* are empirical parameters reflecting features of the experimental situation. *M* represents the “baseline propensity” of a population to reject influence attempts, independent of any idea about who is right; *m* is higher for college students than for high school students, and is higher still for military officers. *Q* tells how important expectations are in a particular situation. *Q* is higher when individuals are very task focused and lower when they do not much care about getting right answers. Parameters *m* and *q* are estimated from the data. In our groups, best fit obtains with *m* = .63 and *q* = .20.

**Table 3**

Phase 2 predicted and observed behavioral data.

Condition	Predicted $P(s)$	Observed $P(s)$	S.d.	Difference (obs. – pred.)	$N$
1	.706	.729	.146	.023	25
2	.557	.558	.127	.001	24
3	.706	.684	.176	–.023	27
4	.557	.557	.199	.000	25

**Table 4**

Phase 2 perceived ability and personality attributions.

Cond. ( $N$ )	$p$ 's Ability compared to $o$ 's (9-point scale)	$o$ is Sure of Self (7-point scale)	$o$ is Assertive (7-point scale)
1. (25)	6.40	4.64	4.32
2. (24)	5.79	5.08	4.97
3. (27)	6.11	4.89	4.41
4. (25)	5.68	5.32	5.12
$F$	3.662*	2.823*	4.076**

\*  $p < .05$ .\*\*  $p < .01$ .

Estimating two quantities from four experimental conditions leaves two degrees of freedom for testing the model. The estimates are used to predict  $P(s)$  values.

Table 3 presents predicted and observed  $P(s)$  for the experiment. This is the main test of the predictions, and the fit is excellent. Predictions are accurate, with differences ranging from .000 to .023, and a mean absolute difference of .012. A  $X^2$  model-fit test shows that predictions are not significantly different from data ( $X^2 = 2.552$ ,  $df = 2$ ,  $p = .279$ ).  $R^2$  for the OLS model is .956.  $G^2$ , the proportional reduction in  $X^2$  of the model, a test proposed by Fişek et al. (2002, p. 337), is also very good; it is .949.

Besides  $P(s)$ , it is reasonable to expect that participants experience subjective impressions of themselves and their partners that reflect expectations. Table 4 shows results from the phase 2 questionnaire on expectation-related impressions.

Column 2 of Table 4 reports ability perceptions for the phase 2 task on a 9-point scale where 1 is labeled “partner has much greater ability,” 9 is “I have much greater ability,” and the midpoint 5 is “we have exactly equal ability.” We expect that ability will favor self in conditions 1 and 3, more so than in conditions 2 and 4. That is what the data show. Data in columns 3 and 4 represent 7-point scales. They show attributions to the partner of two traits, self-confidence (“sure of self”) and assertiveness (“assertive”). We expect that status disadvantage for the partner in conditions 1 and 3 may make her seem less sure of self and less assertive; and the opposite in conditions 2 and 4. That is what the data show. Row 5 presents the results of ANOVA tests.

Tukey's post-hoc tests indicate that for “ $p$ 's ability compared to  $o$ 's,” a significant difference occurs between conditions 1 and 4 ( $p < .05$ ). For “ $o$  is sure of self,” significant differences are between conditions 1 and 4 ( $p < .05$ ) and conditions 3 and 4 ( $p < .05$ ). For “ $o$  is assertive,” the significant difference is between conditions 1 and 4 ( $p < .05$ ). Thus, while not all conditions are significantly different from one another, differences between the more extreme conditions are significant and the overall predicted pattern holds.

## 5. Discussion and conclusions

We are encouraged by the results of these tests. Table 3 shows that behavioral predictions from the new theory were confirmed. We conclude that it is possible for a nominal characteristic to acquire status value through either of the routes we created. Linking a nominal characteristic indirectly to an existing status characteristic through other actors, as we did in conditions 1 and 2, is sufficient for status value to spread from the status characteristic to the nominal characteristic. Linking the nominal characteristic to invidious outcomes, as we did in conditions 3 and 4, also is sufficient for status value to spread to the new characteristic. As predicted, the process works equivalently for spread of positive or negative status value. No bias such as self-enhancement or a preference for positive information is apparent.

The primary theoretical predictions are the behavioral data in Table 3, and those show that individuals acted as they would if they and their partners possessed a status distinction. They were not simply distinguished by their S2/Q2 classifications; instead, they used the S2/Q2 classification to infer that they differed in status and task ability.

The impressive research program of Ridgeway and her students and colleagues has developed considerable understanding of how interaction inequality can generate and stabilize status beliefs. To that body of knowledge we are able to contribute our finding that the basis of status beliefs is more general. We did not have any interaction before measuring status beliefs at the end of phase 1 of our experiments. Yet the status beliefs we found (Table 2), using some of the same measures as Ridgeway's research has used, are quite similar to what she finds. Thus we now believe that whenever there is an

influence hierarchy or there are links to differentially valued outcomes or other established status characteristics, status beliefs can form and attach to a nominal characteristic.

The phase 1 questionnaire results in Table 2 show that participants attached status beliefs to the different states of  $N$ , and not just to the particular individuals in their groups. Participants reported that “most people” and, to a lesser extent “I personally” see  $S_2$  as higher status, more leader-like, competent and knowledgeable. Those results are consistent with some results that Ridgeway and her colleagues have reported regarding status beliefs acquired in theoretically different situations.

Phase 2 questionnaire results in Table 4 supplement the behavioral data in Table 3 with subjective measures of specific task expectations. Perceived ability at contrast sensitivity in phase 2 is consistent with status positions (high in conditions 1 and 3, and low in conditions 2 and 4). While questionnaires may be imperfect measures of expectations, they generally show that individuals can retrieve their relative evaluations of self and other, as they did here.

Columns 3 and 4 of Table 4 show that different traits were attributed to individuals in association with their status positions. A partner of higher status than oneself seemed more confident and assertive than a partner of lower status. (And yet the partner's supposed behavior was the same in all conditions). Gwendolyn Gerber (2001) reported similar results from a very different setting. She studied police car teams in New York City and showed that personality attributions such as being assertive and proactive were associated with high status position within the team rather than, for instance, with gender.

As a first test, our data do not address many other theorems and derivations possible from the new theory. One such issue is whether the characteristic that we created will be stable. That is, will it persist and transfer its effects to new interactants and new tasks? Naturally occurring status characteristics have those properties. If a newly-created characteristic is stable, then these processes create status characteristics that are equivalent to existing characteristics. If it is not stable, then we have only demonstrated the first step in creating new characteristics. Assessing stability seems to us an important next step in the research program.

Can these processes also break down a status characteristic once it exists? One route for breaking down status value might be to add new information that is inconsistent with the information that originally created a characteristic. For instance, if  $N_A$  acquired positive status value because of its links to successful referent actors or to states of status characteristics, then  $N_A$  might lose status value if new information links it to unsuccessful referent actors or to negatively valued status characteristics. Understanding the breakdown process would be valuable in cases of unwanted status generalization.

We close with a somewhat speculative interpretation of status creation processes in an important arena: how “native population” and “immigrant group” can become invidious status distinctions.<sup>19</sup> We would never claim that problems arising from migration are *only* problems of status, and we acknowledge that migration situations differ widely. Sending and receiving countries differ in many respects in every case, and migrant groups all bring distinctive cultures and experiences with them. However, we believe that migration is one setting in which status creation may occur, and when it does, our theory can help to explain certain features of it and identify points at which interventions may help alleviate status-related problems.

A recent study of European migrations Semyonov et al. (2006, p. 431) noted that:

Despite differences in . . . composition of foreign populations and despite differences in national histories, political system, and immigration policies, migrant ethnic minorities are viewed as “outsiders” and “foreigners.” They often have become a target for discrimination, prejudice, and even violence in West European countries.

Immigrants become subject to many forms of prejudice and discrimination that Semyonov et al. (2006, p. 428) describe as “antipathy accompanied by faulty generalization.” European immigrant groups who have moved from south to north and from east to west often have less education, lower occupational prestige, and lower earnings on average than individuals in the native population (Castles and Kosack, 1985). From our perspective, “native” and “immigrant” are initially states of a nominal characteristic, but education, occupation, and income all have status significance. Immigrants usually have lower standing on education, occupation, and income than native populations. Given these conditions, status value spreads to the social categories “native population” and “immigrant group” with the former acquiring relatively high status and the latter relatively low status as in conditions 3 and 4 of our experiments. We believe that in many cases immigration leads to creation of new status characteristics stereotyping and devaluing immigrants. Consequently, immigrants are labeled as lower in social worth and performance capacity than member of the native population. Newly created status characteristics become part of the many problems of racism (Pettigrew, 1998).

Status characteristics affect beliefs and behavior of members of unequal groups. Status-related beliefs include imputed traits and abilities, often including supposed laziness, incompetence, and emotionality on one side; and skillfulness, moral worthiness, and industriousness on the other side. Status-related behaviors include exerting influence and displaying deference. Those beliefs and behaviors come to be accepted as innate and legitimate; breaches cause social and psychological stress on both sides. Social definitions and structural relations can become established in a hierarchical system.

The hopeful message is that theories of status generalization have been used successfully for interventions to reduce or eliminate undesirable effects of status processes in many settings, and the theories should be useful in these cases also. Showing immigrants who have achieved institutionally supported high status or leadership positions, for instance, can reduce status disadvantages associated with that characteristic through spread of status value. We anticipate that we and others can use these theories to develop effective interventions against unwanted spread of status value.

<sup>19</sup> We are indebted to an unpublished paper that Berger and Fisek (2008) shared with us for some of this analysis.

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