Status Characteristics and Performance Expectations: A Reformulation*

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Status characteristics theory predicts the emergence and structure of power and prestige orders in task groups from members' status attributes. This paper argues that application of the burden of proof assumption, central to the theory, is inconsistent with a key concept, generalized expectation state. A reformulation is proposed that eliminates the inconsistency and gives competing predictions for a wide range of situations. The reformulation predicts that, when not directly relevant to task performance, specific characteristics (e.g., athletic or analytical ability) have less impact than diffuse characteristics (race, gender, or education) on performance expectations. The original formulation predicts equal effects. Critical tests are proposed and the paper concludes with additional comparisons of the two formulations on the grounds of parsimony and implications for intervention in settings characterized by status-based inequalities.

INTRODUCTION

Status characteristics theory explains how status differences among interactants determine the emergence and structure of power and prestige orders in task groups. For over four decades, the theory has undergone successive refinements and has been extended to an increasingly broader array of status-related phenomena (Wagner and Berger 1993). The result is a cumulative body of knowledge about the processes through which status differences, such as those based on race or gender, get enacted and maintained in day-to-day interactions.

Researchers in this area have generally focused on two classes of status characteristics, *specific* and *diffuse*. A specific status characteristic, C_i, satisfies the following conditions:

> 1) The states of C_i are differentially evaluated [and] 2) To each state x of C_i there corresponds a distinct expectation state, SPE(x), having the same evaluation as the state $C_i(x)$ and relevant to a specified type of task outcome. (Berger et al. 1977:94)

Examples of specific characteristics include athletic ability and reading ability.

Diffuse characteristics (D_i) satisfy criterion 1 above and

> 2′) To each state x of D_i there corresponds a distinct set of states of specific, evaluated characteristics associated with $D(x)$] and, 3) To each state x of D_i there corresponds a distinct general expectation state, GES(x), having the same evaluation as the state $D_i(x)$. (Berger et al. 1977:94)

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Researchers have examined a wide variety of diffuse characteristics, including gender (Wagner, Ford, and Ford 1986), race (Webster and Driskell 1978), age (Freese and Cohen 1973), physical attractiveness (Webster and Driskell 1983), and education (Moore 1968).

A crucial insight of status characteristics theory is that specific and diffuse characteristics have powerful and predictable effects on power and prestige hierarchies even when they are not directly relevant to task performance (Berger, Cohen, and Zelditch 1972). The current formulation of the theory asserts that, *when not directly relevant to task performance or task ability*, specific and diffuse characteristics have identical effects on actors' expectations about how group members will perform on a given task. Berger et al. (1977) note that the predicted identical effects of specific and diffuse characteristics is a simplifying assumption:

> It is only reasonable to assume that different characteristics have different weights, that they contribute different magnitudes to the formation of expectations. Diffuse status characteristics can be differentially weighted and also can differ from specific status characteristics in weight. However, as a first approximation, we are assuming that all characteristics, whether specific or diffuse, have equal weights. This is one aspect of the model that we intend to modify at later stages of model development. (p. 116)

Over two decades after the publication of this statement, the simplifying assumption remains unchanged.

This paper argues that the simplifying assumption rests on a logical inconsistency. We offer a reformulation that removes the logical inconsistency and with it the simplifying assumption. The reformulation predicts that diffuse characteristics have greater effects on performance expectations than do specific characteristics. Importantly, we show that the reformulation is as parsimonious as the existing formulation. To these ends, we begin with a brief review of the current formulation. We then describe the inconsistency and propose a reformulation. Then, using the results of previous studies, we offer a more detailed illustration of the conditions under which the original and revised formulations give differing predictions. In addition, a critical test between the two formulations is proposed. Finally, we discuss implications for intervention in settings characterized by status-based inequalities.

Status Characteristics Theory

In this section we outline basic concepts of the theory and demonstrate how the graph-theoretic formulation generates predictions. We focus specifically on the processes through which specific and diffuse characteristics affect performance expectations. These processes are described by the assumptions and graph construction rules given in Table 1.[1]

Graph-theoretic representations of interaction are composed of *points* (*elements*), some of which are connected by *relations*. Points may represent actors (denoted *p*, *o*, etc.), the states of diffuse characteristics (symbolized $D^{(+)}$ and $D^{(-)}$ for high and low states, respectively), or specific characteristics ($C^{(+)}$ and $C^{(-)}$). In addition, points may represent the states of task performance or task outcomes ($T^{(+)}$ and $T^{(-)}$ for "success" and "failure,"

[1] Application of the theory is limited to the scope conditions outlined in Table 1, taken from Berger et al.'s (1977) formulation, which comprises the core concepts and assumptions of the status characteristics research program. In this paper, we discuss only those parts of the theory necessary to motivate the reformulation. See Berger et al. (1977) and Humphreys and Berger (1981) for more extended treatments.

Table 1. Scope Conditions and Assumptions of Status Characteristics Theory*

Scope Conditions:

1) Situations must include task outcomes that actors define as success (T+) and failure (T−).
2) Actors must believe that there exists some characteristic, C*, the states of which are instrumental to task success and failure.
3) If the task is composed of several subtasks, the same C* must be instrumental to each subtask.
4) The task must be collective, insofar as it is both "necessary and legitimate" for actors to take each other's behavior into account.

Assumptions:

1. (Salience Completion Process): 1. Given existing paths connecting an interactant to outcome states of the group task the elements and relations in these paths become salient in the task situation; and 2. Given status characteristics that provide a basis for discrimination between interactants the states of these characteristics become salient in the task situation.
2. (Burden of Proof Completion Process): Given that a salient status element, possessed or connected to an interactant, is not connected to the task, or is connected by an existing path of length 5 or greater, then: (1) If the status element is the state of a diffuse characteristic, the associated generalized expectation state will become relevant to a similarly evaluated state of C*; and (2) If the status element is the state of a specific characteristic, its relevant task outcome state will be activated. This task outcome state will become relevant to a similarly evaluated state of abstract task-ability and the latter will become relevant to a similarly evaluated outcome state of the group task.
3. (Sequencing of Structure Completion): A given structure will be developed through the saliency and burden of proof processes for the interacting actors. If a noninteracting actor should later become an interactant, then the structure will be further developed through the operation of the structure completion processes. For any actor, those parts of his structure completed in relation to a former interactant remain while the actor is in the given situation S*.
4. (4.1: Formation of Aggregated Expectation States: Combining Paths of Like Signs): If an actor x is connected to the outcome states of the group task by paths of like sign, and strengths $f(i)\ldots f(n)$, then these paths are combined to yield an aggregated expectation value e for the actor x according to the following rule: $[e_x = e_x^+$ if the paths are positive and $e_x = e_x^-$ if the paths are negative where $e_x^+ = [1-(1-f(i))\ldots(1-f(n))]$ and $e_x^- = -[1-(1-f(i))\ldots(1-f(n))]$.
   (4.2: Formation of Aggregated Expectation States: Combining Paths of Unlike Signs): If an actor x is connected to the outcome states of the group task by sets of positive paths and negative paths, these paths will first be combined within like-sign subsets to yield a positive-paths value e_x^+ and a negative-paths value e_x^- for x. The entire set of paths will be combined by adding the negative-paths value to the positive-paths value to yield an aggregated expectation value e for x. That is, $e_x = e_x^+ + e_x^-$.
5. (Basic Expectation Assumption):Given that p has formed aggregated expectation states for self and other, p's power and prestige relative to o will be a direct function of p's expectation advantage over o.
   (A Function for Stay-Response Probabilities): The probability of an actor's staying with his or her own choice given a disagreement from another actor with whom he or she is interacting is given by the following function: $p(S) = m + q\,(e_p - e_o)$, where m and q are empirical constants.

*Adapted from Berger et al. (1977:95–131).

respectively). Finally, points may represent task ability, or the characteristic instrumental to superior (or inferior) performance on the task at hand ($C^{*(+)}$ and $C^{*(-)}$). Note that task ability (C*) is distinct from a specific status characteristic (C) in that the former entails the ability (or inability) to perform well on the group task. Thus, mathematical ability may be a *specific status characteristic* (C) in many task settings, but only when the collective task involves solving a math problem is math ability equivalent to C*.

These elements, as well as the "induced elements" introduced below, may be connected by *possession*, *relevance*, or *dimensionality* relations. Possession relations connect actors to non-acting (inanimate) elements such as states of status characteristics or task outcome states. Relevance relations exist between status-bearing elements (e.g., status characteristics or task outcome states). Element e_i is relevant to e_j if and only if, when x possesses e_i, he or she is expected to possess e_j. Dimensionality exists between oppositely valued states of characteristics that actors in situations *actually possess* (such as a status characteristic) and carry a negative valence (Berger et al. 1977:98–99).

Graphs may also contain induced elements. Following Assumption 2 (Table 1), when salient status characteristics are not initially connected to task outcome states (through the salience completion process), they become relevant to task outcomes via a *burden of proof* process. In particular, specific characteristics (Cs) become relevant to task outcome states (T) through the activation of *specific task outcome states* and *abstract task ability*.

> [Specific task outcome states are represented by] $\tau_i^{(+)}$ and $\tau_i^{(-)}$, where $\tau_i^{(+)}$ is the task outcome state associated with $C_i^{(+)}$, and $\tau_i^{(-)}$ is the task outcome state associated with $C_i^{(-)}$ where the subscripts identify the specific characteristic that is relevant to the specified task. (Berger et al. 1977:98)

> [Abstract task ability] exists in two states, $Y^{(+)}$, the state of doing well at tasks, and $Y^{(-)}$, the state of doing poorly at tasks. (p. 97)

Diffuse characteristics (Ds) become relevant to task outcome states (T) through the activation of *generalized expectation states*, which are

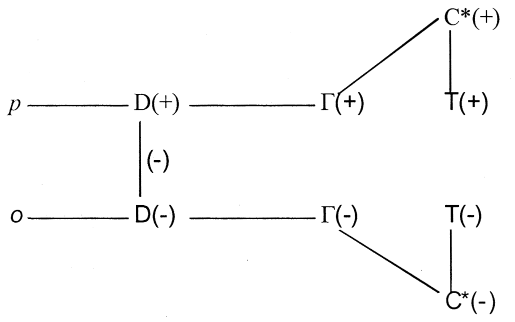
> symbolized by $\Gamma_i^{(+)}$ for the component representing generalized performance superiority for the *i*th diffuse status characteristic and $\Gamma_i^{(-)}$ for the component representing generalized performance inferiority. (p. 97)

In addition, Berger et al. assert that generalized expectation states

> represent conceptions of relative capacity and incapacity, relative performance superiority and inferiority associated with different states of the [diffuse] characteristic. (p. 97)

(These concepts and definitions are considered in greater detail in the section to follow.)

Figure 1 depicts a task setting involving two interactants, *p* and *o*, who possess oppositely valued states of a diffuse characteristic. There are two task outcome states, $T^{(+)}$ and $T^{(-)}$, which correspond to task success and failure, respectively, and a characteristic (C*) instrumental to performance on the group task. Initially, interactants are not connected to task outcomes. But, following the burden of proof assumption (Assumption 2), generalized expectation states (Γ) become relevant to the like-signed state of C*, which, in turn, connects each actor to the corresponding task outcome state (T). This completed structure determines the relative expectation advantages for interactants, as described by Assumption 4 (Table 1).



* Key: p = self; o = other; $D^{(+)}$, $D^{(-)}$ = Positively and negatively valued states of a diffuse status characteristic; $\Gamma^{(+)}$, $\Gamma^{(-)}$ = Generalized expectation states; $C*^{(+)}$, $C*^{(-)}$ = Task ability; $T^{(+)}$, $T^{(-)}$ = Task outcome (performance) states.

Figure 1. Berger et al.'s Graph-theoretic Representation of Two Actors Differentiated by a Diffuse Status Characteristic.

Assumption 4 states that expectatons are a function of the length, number, and signs of paths connecting actors to task outcome states. The length of a path from element e_i to e_j is assumed to denote the "degree of relevance" of e_i and e_j; the shorter the path, the greater the relevance. $F(i)$ gives the degree of relevance of a path of length i, where f is a decreasing function of path length.[2] As given by the equation, $e_x = [1 - (1 - f(i)) \ldots (1 - f(n))]$, the theory assumes that, in combining paths of like sign, an attenuation process operates such that each additional path has a smaller impact on expectations.

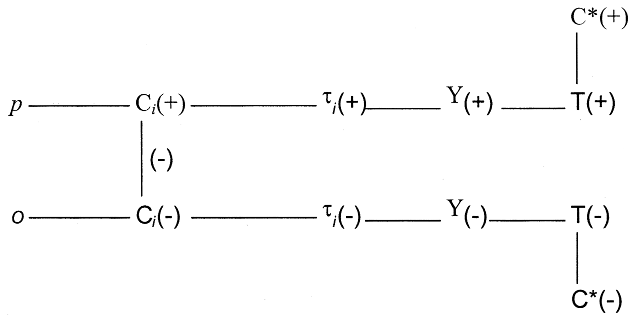
Note that, in Figure 1, p is connected to the task outcome by a 4-path (p—$D^{(+)}$—$\Gamma^{(+)}$—$C*^{(+)}$—$T^{(+)}$) and a 5-path (p—$D^{(+)}$—$D^{(-)}$—$\Gamma^{(-)}$—$C*^{(-)}$—$T^{(-)}$). Both paths are positively signed. (The 5-path is positive because the product of the signs along the path and the terminus is positive.) Fisek et al. (1992) give $f(i) = .1358$ and $f(i) = .0542$ for 4-paths and 5-paths, respectively. Therefore, following Assumption 4, $e_p = [1 - (1 - .1358)\ (1 - .0542)] = .1826$. Since the graph is symmetric, $e_o = -[e_p] = -.1826$, giving p an expectation advantage of $[.1826 - (-1826)] = .365$.

Compare the status situation of Figure 1 with that of Figure 2. The Figure 2 setting contains two interactants, p and o, who possess oppositely valued states of a specific status characteristic, C. The specific characteristic is not initially relevant to the task outcome; its relevance is established through the burden of proof process. Most importantly, note that the length, number, and signs of paths connecting p and o to task outcome states (through τ and Y) are identical to those in Figure 1. The theory therefore predicts that *similarly signed states of diffuse and specific characteristics have exactly the same impact on performance expectations.* At issue for the remainder of this paper is whether this prediction is justified, logically or empirically.

An Assessment and Reformulation

Do specific and diffuse characteristics have equal effects on performance expectations? Evidence of the powerful discriminatory effects of diffuse characteristics such as race and gender in employment, promotions, and daily interaction suggests otherwise. In this sec-

[2]Throughout this paper we use $f(i)$ values derived by Fisek, Norman, and Nelson-Kilger (1992), which they show to fit existing data as well as *post hoc* estimations by Berger et al. (1977).



* Key: p = self; o = other; $C^{(+)}$, $C^{*(-)}$ = Positively and negatively valued states of a specific status characteristic; $\tau^{(+)}$, $\tau^{(-)}$ = Specific task outcomes states; $Y^{(+)}$, $Y^{(-)}$ = Abstract task ability; $T^{(+)}$, $T^{(-)}$ = Task outcome (performance) states; $C^{*(+)}$, $C^{*(-)}$ = Task ability.

Figure 2. Graphic Representation of Two Actors Differentiated by a Specific Characteristic.

tion, we argue that key concepts of status characteristics theory also suggest that diffuse characteristics play a more prominent role in social interaction than specific characteristics. More specifically, we argue that the burden of proof assumption and the associated graph construction rule employed in the Berger et al. (1977) formulation is inconsistent with the concept "generalized expectation state." We then outline a reformulated model. We show that the reformulation predicts stronger effects for diffuse characteristics and argue that the reformulation embodies a more logically coherent model than the Berger et al. formulation.

Consider again the graphs of Figures 1 and 2. Note that in Figure 1 each generalized expectation state (Γ) is relevant to the corresponding state of task ability (C*). In contrast, Figure 2 shows that elements associated with C, specific task outcome state (τ_ι) and abstract task ability (Y), are connected *directly* to task performance (T). At issue is whether it follows from the definitions of these elements that Y (abstract task ability) should be directly connected to T, whereas Γ (generalized expectation state) should be mediated by C*.

As noted earlier, Y represents the state of *doing well* [or *poorly*] at tasks. Thus, according to Berger et al., Y is an expectation of *performance*, not *ability*: That the element should be directly relevant to task performance follows from its designated meaning. Similarly, Γ represents *generalized performance superiority* (or *inferiority*). Thus the graph element "generalized expectation state," like the element "abstract task ability," is defined, not as an expectation of *ability*, but as an expectation of *performance*. This is a crucial distinction. By linking Γ to C* (rather than T), Berger et al. equate the relative impact of diffuse and specific characteristics (and realize their simplifying assumption). But if we accept the definition of generalized expectation state as an expectation of performance, it follows that, like abstract task ability, the element should be connected directly to task performance (T), not meditated by task ability (C*).[3]

The assertion that generalized expectation states should be connected directly to states of task performance, rather than task ability, follows from the definition of the graph

[3]The importance of the distinction between task ability and performance is underscored by Foschi's (1989; 2000) research on double standards. Briefly, this work shows that equally good (poor) performances on a given task can lead to very different judgments of ability (inability) depending on the characteristics of the performer. For example, females often must outperform males to be deemed equally competent.

element (Γ) that corresponds to generalized expectation states. But as noted earlier, Berger et al. also assert that generalized expectation states represent "conceptions of relative *capacity* and *incapacity*" *and* "*performance superiority* and *inferiority*." Note that this definition is more inclusive than the definition of the graph element (Γ): whereas the graph element's definition involves only expectations of performance, the non-graph theoretic definition of generalized expectation states incorporates expectations of performance *and* ability.

The graph-theoretic formulation is the most rigorous and explicit statement of status characteristics theory. The reformulation we propose therefore incorporates definitions of graph-theoretic components, rather than their less formal counterparts. Nevertheless, below we outline the implications of following the more inclusive definition (i.e., generalized expectation states as conceptions of performance *and* ability). Importantly, as detailed below, the assumption and graph-construction rule consistent with the more inclusive definition generate graphs (and predictions) identical to those of the reformulated assumption and graph-construction rule we now propose (and are inconsistent with those of the Berger et al. formulation).

> *Revised Assumption 2* (*Burden of Proof Completion Process*): Given that a salient status element, possessed by or connected to an interactant, is not connected to the task, or is connected by an existing path of length 5 or greater, then:
>
> 1. If the status element is the state of a diffuse characteristic, the associated generalized expectation state will become relevant to a similarly evaluated task outcome state.
>
> 2. If the status element is the state of a specific characteristic, its relevant task outcome state will be activated. This task outcome state will become relevant to a similarly evaluated state of abstract task-ability and the latter will become relevant to a similarly evaluated task outcome state.

To illustrate the revised assumption, Figure 3a reconstructs the task setting—originally depicted in Figure 1—in which two interactants (*p* and *o*) are differentiated by a diffuse characteristic. Through the revised burden of proof process, each state of D becomes associated with its corresponding generalized expectation state (Γ), which becomes relevant to the similarly signed task outcome state (T). Since they are not mediated by C*, the paths connecting *p* to T in Figure 3a are shorter (i.e., stronger) than those in Figure 1: Figure 3a connects *p* to $T^{(+)}$ by a 3-path (p—$D^{(+)}$—$\Gamma^{(+)}$—$T^{(+)}$) and a 4-path (p—$D^{(+)}$—$D^{(-)}$—$\Gamma^{(-)}$—$T^{(-)}$); similarly *o* is connected to $T^{(-)}$ by a 3-path and a 4-path. Thus the revised formulation predicts a greater difference in expectations for two interactants differentiated by a diffuse characteristic than does the original formulation. Since the prediction for a specific characteristic (C) remains unchanged, it follows that the revised formulation predicts stronger effects for diffuse than for specific characteristics. Importantly, as discussed below, both formulations predict differentiation on task ability (C*) to have greater effects on performance expectations than differentiation on a single D or C not directly relevant to task performance.

Now assume that generalized expectation states represent conceptions of performance *and* ability, as suggested by the more inclusive definition. In this case, a revised burden of proof assumption connects Γ to task ability (C*) *and* task performance (T). That is,

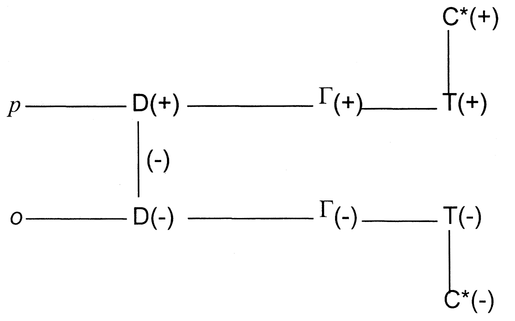


Figure 3a. The Reformulation's Graphic Representation of Two Actors Differentiated by a Diffuse Characteristic (where Γ = "expectation of performance").

> Given that a salient status element, possessed or connected to an interactant, is not connected to the task, or is connected by an existing path of length 5 or greater, then: If the status element is the state of a diffuse characteristic, *the associated generalized expectation state will become relevant to a similarly evaluated state of C* and a similarly evaluated state of T.*

Application of this assumption to two actors differentiated by a diffuse characteristic results in the graph of Figure 3b, in which each generalized expectation state (Γ) is directly relevant to the corresponding state of task performance (T), as the reformulation suggests. In addition, Γ is connected to task ability (C*) which, in turn, connects to task performance (T), as modeled by Berger et al. However, only the former (direct) path is effective because, as Berger et al. note,

> If the graph contains a line joining two points neither of which is an actor, then any path containing a subpath of length 2 or more joining these same two points is not effective. (p. 117)

The path through C* is therefore ineffective. That is, because Γ is connected directly to T, the indirect path (Γ—C*—T) adds no additional information and is therefore assumed to

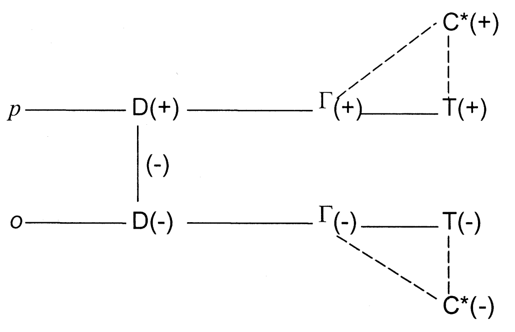


Figure 3b. The Reformulation's Graphic Representation of Two Actors Differentiated by a Diffuse Characteristic (where Γ = expectation of performance and ability).

have no effect on performance expectations. Thus, the "effective graph" of Figure 3b is identical to the graph shown in Figure 3a. In short, regardless of whether we consider generalized expectation states as expectations of performance only, or as expectations of performance *and* ability, the theory predicts that *diffuse characteristics have a greater impact on performance expectations than specific characteristics.*

Examination of Existing Data

This section reviews the results of several previous studies. We focus specifically on those for which Berger et al.'s (1977) formulation and the reformulation proposed in the preceding section give competing predictions. We emphasize that this review is not intended as a critical test of the two formulations. Only new experiments, which are proposed immediately below, offer such a basis of comparison. Nor is the review exhaustive: It simply allows a more detailed comparison of the two formulations and suggests whether future research should include critical tests.

The most straightforward test between the Berger et al. (hereafter BFNZ) and revised formulations is one containing four conditions: 1) a subject is assigned the high state of a diffuse characteristic ($D^{(+)}$) and her partner is assigned $D^{(-)}$; 2) a subject is assigned $D^{(-)}$ and her partner is assigned $D^{(+)}$; 3) a subject is assigned the high state of a specific characteristic ($C^{(+)}$) and her partner is assigned $C^{(-)}$; and 4) a subject is assigned $C^{(-)}$ and her partner is assigned $C^{(+)}$. In no condition is the characteristic made explicitly relevant to task ability (C*) or performance (T). The reformulation predicts a greater difference in p(S) responses between conditions one and two than conditions three and four.[4] That is,

$$(p(S)_{\text{Condition 1}} - p(S)_{\text{Condition 2}}) > (p(S)_{\text{Condition 3}} - p(S)_{\text{Condition 4}}).$$

The BFNZ formulation, on the other hand, predicts

$$(p(S)_{\text{Condition 1}} - p(S)_{\text{Condition 2}}) = (p(S)_{\text{Condition 3}} - p(S)_{\text{Condition 4}}).$$

Because our literature review found no experiments that satisfy the above conditions, our comparison of the formulations will take a slightly different form.[5] We first consider an experiment by Freese and Cohen (1973) that compared the effects of one D with two Cs not explicitly relevant to C*. We then discuss an experiment by Pugh and Wahrman (1983) that compared the effects of differentiation on one D to the effects of inconsistently assigned states of D and C when C was made explicitly relevant to C*. Finally, we consider a series of studies by Cohen and her associates in which participants were differentiated on one D, and $D^{(-)}$ participants were assigned the positive states of two Cs made explicitly relevant to the group task (T). Though less direct than the four-condition experiment proposed above, a survey of results from these studies allows a demonstration of the range of conditions under which the two formulations offer competing predictions.

[4] P(S), which denotes the likelihood that ego remains with his or her initial response given disagreement (i.e., that ego is not influenced by alter), is the most common measure of influence used in status characteristics research. Assumption 5 (Table 1) gives the function that translates expectation advantages (disadvantages) into p(S) predictions. (See Berger et al. [1977:131–34] for a more extended treatment of p(S) calculations, and Berger and Conner [1974] for a more general discussion of the various behavioral consequences of power and prestige orders.)

[5] Experiments by Hembroff and associates (e.g., Hembroff 1982; Hembroff, Martin, and Sell 1981) employed conditions in which subjects were differentiated on a diffuse characteristic and conditions in which subjects were assigned differentiated states of what Hembroff calls "performance sets." Performance sets are non-unitary analogues to specific characteristics. Since it is unclear, from the perspective of SCT, how a subject infers from classification as "high" on two substrates of contrast sensitivity, for example, and "low" on a third substrate, we do not consider their results in this paper.

Table 2. Observed and Predicted p(S) values in Freese and Cohen (1973).[a]

Condition	Status Characteristic	Observed p(S)[b]	Predicted p(S) BFNZ Formulation	Predicted p(S) Revised Formulation
1	$D^{(+)}$	.74	.68	.73
2	$D^{(-)}$	.57	.62	.57
	$[p(S)_1 - p(S)_2]$	*.17****	*.06*	*.16*
3	$C^{(+)}, C^{(+)}$	.70	.71	.71
4	$C^{(-)}, C^{(-)}$	.59	.59	.59
	$[p(S)_3 - p(S)_4]$	*.11**	*.12*	*.12*
5	$D^{(+)}, C^{(-)}, C^{(-)}$	.59	.62	.66
6	$D^{(-)}, C^{(+)}, C^{(+)}$	.69	.68	.64
	$[p(S)_5 - p(S)_6]$	*−.10***	*−.06*	*.02*

a. Adapted from Freese and Cohen, Tables 1 and 2.
b. *** $p \leq .001$; ** $p \leq .01$; * $p \leq .025$.

Consider first the experiment by Freese and Cohen (1973). As shown in Table 2, subjects in conditions one and two were differentiated from their partners on a diffuse characteristic (age). In the first condition, $D^{(+)}$ subjects were told they were interacting with a much younger partner. Subjects in condition two ($D^{(-)}$) were told they were interacting with a much older partner.

Conditions three and four differentiated subjects from their partner on two specific characteristics, "meaning insight ability" and "contrast sensitivity," both of which are fictitious skills used for experimental convenience (see Berger et al. 1977). Subjects in the third condition were assigned the high state, and their partner the low state on both Cs ($C_1^{(+)}$, $C_2^{(+)}$). Conversely, subjects in the fourth condition were assigned the low, and their partner the high, state on both Cs ($C_1^{(-)}$, $C_2^{(-)}$). Finally, conditions five and six differentiated subjects from their partner on the diffuse characteristic and the two specific characteristics. Subjects in condition five were assigned the high state of the diffuse characteristic ($D^{(+)}$) and the low states of the specific characteristics ($C_1^{(-)}$, $C_2^{(-)}$). The sixth condition was the mirror image ($D^{(-)}$, $C_1^{(+)}$, $C_2^{(+)}$). Following the status manipulations, subjects engaged in the collective task, which required "spatial judgment ability," a fictitious perceptual task. In no condition were characteristics (D or Cs) made explicitly relevant to the spatial judgment task.

The BFNZ and revised formulations give identical predictions for conditions three and four: Each formulation connects subjects in condition three to the task outcome by two positive 4-paths and two positive 5-paths. (Conversely, subjects in condition four are connected to the task outcome by two negative 4-paths and two negative 5-paths.) Let *p* and *o* denote a subject in condition three ($C_1^{(+)}$,$C_2^{(+)}$) and four ($C_1^{(-)}$, $C_2^{(-)}$), respectively. Then, as described by Assumption 4, $e_p = [1 - (1 - .1358)^2\ (1 - .0542)^2] = .332$ and $e_o = -.332$, giving *p* an expectation advantage of .664. As shown in Table 2, both formulations predict $p(S)_{\text{Condition 3}} = .71$ and $p(S)_{\text{Condition 4}} = .59$.[6]

[6]The p(S) function is given by Assumption 5. For the Freese-Cohen study, we set $m = .65$, the mean p(S) response for all conditions. For all experiments discussed in this paper we set $q = .092$, the average of values estimated by Berger et al. (1977:146–60). Our conclusions do not rest on any particular value of *q*.

Expectation advantage predictions for conditions one and two are calculated similarly: The revised formulation predicts $p(S)_{\text{Condition 1}} = .73$ and $p(S)_{\text{Condition 2}} = .57$.[7] The BFNZ formulation predicts $p(S)_{\text{Condition 1}} = .68$ and $p(S)_{\text{Condition 2}} = .62$. Thus the revised formulation predicts larger p(S) differences between conditions one and two than conditions three and four, whereas the BFNZ formulation predicts the opposite pattern. Table 2 presents observed p(S) values and differences between conditions. As predicted by the reformulation, the greater differences in p(S) responses are between conditions one and two ($p(S)_1 - p(S)_2 = .17$, $p < .001$), rather than conditions three and four ($p(S)_3 - p(S)_4 = .11$, $p \leq .025$). The BFNZ formulation predicts the opposite pattern and therefore underestimates the effects of the diffuse characteristic on performance expectations.[8]

On the other hand, the predictions of the BFNZ formulation are somewhat more consistent with the results of conditions five and six of the Freese-Cohen study. Briefly, subjects in the fifth condition were assigned the high state of D and the low state of two Cs (and conversely for the sixth condition). Thus, according to the reformulation, condition 5 connects subjects to the task outcome by two positive paths (of length 3 and 4, via $D^{(+)}$) and four negative paths (two 4-paths and two 5-paths, via $C_1^{(-)}$ and $C_2^{(-)}$). Subjects in condition 6 are connected to the task outcome state by two negative paths (of length 3 and 4) and four positive paths (two 4-paths and two 5-paths). Thus, according to the reformulation, subjects in conditions 5 and 6 will have roughly equal expectations for self and other such that $p(S)_{\text{Condition 5}} = .66$ and $p(S)_{\text{Condition 6}} = .64$.

The BFNZ formulation predicts a slight expectation advantage for subjects in condition 6. Specifically, it connects subjects in condition 5 to the task outcome state by two positive paths (of length 4 and 5, via $D^{(+)}$) and four negative paths (two of length 4 and two of length 5, via $C_1^{(-)}$ and $C_2^{(-)}$). Subjects in condition 6 are connected to the task outcome state by two negative paths (of length 4 and 5) and four positive paths (two 4-paths and two 5-paths). This graph results in the following predictions: $p(S)_{\text{Condition 5}} = .62 < p(S)_{\text{Condition 6}} = .68$. As shown in Table 2, Freese and Cohen report similar observed values of $p(S)_{\text{Condition 5}} = .59 < p(S)_{\text{Condition 6}} = .69$. The BFNZ predictions are thus more consistent with data from these conditions than are those of the reformulation.

We point out one aspect of these results that is not predicted by either formulation. Briefly, that observed p(S) values in conditions five and six were nearly identical to those of conditions four and three, respectively, suggests that subjects in conditions five and six attended to specific, but not diffuse, characteristics (see Table 2). Detailed consideration of this issue would lead us into the long-standing debate about how inconsistent status information is processed, an issue beyond the scope of this paper. We thus reserve exploration of this issue for future research and refer interested readers to Freese and Cohen (1973) and the ensuing debates (Webster and Driskell 1978; Hembroff, Martin, and Sell 1981; Zelditch 1985; Norman, Smith, and Berger 1988).

Like Freese and Cohen, Pugh and Wahrman (1983) were interested in conditions in which interactants possess inconsistently evaluated states of diffuse and specific charac-

[7] Specifically, Fisek et al. (1992) give $f(3) = .3175$ and $f(4) = .1358$. Thus, the reformulation predicts $e_{\text{Condition 1}} = [1 - (1 - .3175)\ (1 - .1358)] = .410$ and $e_{\text{Condition 2}} = -.410$, giving participants in condition one an expectation advantage of .820. Then, following Assumption 5, $p(S)_{\text{Condition 1}} = .65 + .092(.820) = .73$ and $p(S)_{\text{Condition 2}} = .65 + .092\ (-.820) = .57$.

[8] It should be noted that Balkwell (1991:endnote 3) has suggested that these data might have been mistakenly interchanged in Freese and Cohen's table of results. Specifically, he asserts that results reportedly obtained in conditions one and two were likely obtained in conditions three and four, respectively (and vice versa). If so, the predictions of the BFNZ formulation more closely resemble the patterning of these data. But Balkwell's assertion seems hard to justify. If the data reported by Freese and Cohen were interchanged in their Table 1 (p. 191), there should be a discrepancy between the values given in the table and the authors' discussion of the data. In fact, the authors reiterate the values reported in the table in their discussion of results. In addition, we have verified the accuracy of reported results with Freese (Personal Communication).

Table 3. Observed and Predicted p(S) in Pugh and Wahrman (1983).[a]

Condition	Status Characteristic	Observed p(S)[b]	Predicted p(S) BFNZ Formulation	Predicted p(S) Revised Formulation
1	$D^{(+)}$	.80	.79	.84
2	$D^{(-)}$	.71	.73	.68
	$[p(S)_1 - p(S)_2]$	*.09***	*.06*	*.16*
3	$D^{(+)}$, $C^{(-)}$—$C^{*(-)}$	.74	.72	.76
4	$D^{(-)}$, $C^{(+)}$—$C^{*(+)}$	.76	.80	.76
	$[p(S)_3 - p(S)_4]$	*−.02**	*−.08*	*.00*

a. Adapted from Pugh and Wahrman (1983), Table 1
b. ** $p = .004$; * $p = NS$.

teristics. Four conditions of the Pugh and Wahrman study are relevant to present concerns. In the first condition ($D^{(+)}$), male subjects were told that they were interacting with a female but were given no other information. The second condition ($D^{(-)}$) was the mirror image. The third and fourth conditions were identical to conditions one and two, respectively, with one exception: Subjects possessing $D^{(+)}$ (condition three) were told that they possessed the low state of a C that was directly relevant to task ability (i.e., $C^{(-)}$—$C^{*(-)}$). Subjects possessing $D^{(-)}$ (condition four) were told that they possessed the high state of the C directly relevant to task ability ($C^{(+)}$—$C^{*(+)}$). Pugh and Wahrman sought to demonstrate that an advantage (or disadvantage) on a C made relevant to C* could *reverse* the disadvantage (or advantage) that resulted from the inconsistent state of D. In fact, this is exactly the prediction made by the BFNZ formulation.

As shown in Figure 1, when interactants are differentiated by a single D (as in conditions one and two), the BFNZ formulation connects the high and low status actor to $T^{(+)}$ and $T^{(-)}$, respectively, by one 4- and one 5-path. Thus subjects in conditions one and three are connected to $T^{(+)}$ by one 4- and one 5-path. Additionally, because subjects in condition three possess $C^{(-)}$, which is directly relevant to $C^{*(-)}$, they are connected to the negative task outcome ($T^{(-)}$) by one 3-path and one 4-path. (Table 3 shows that conditions two and four are mirror images of conditions one and three, respectively.) Setting $m = .76$ (the mean p(S) value for all conditions of the Pugh-Wahrman study), the BFNZ formulation predicts: $p(S)_{\text{Condition 1}} = .79$, $p(S)_{\text{Condition 2}} = .73$, $p(S)_{\text{Condition 3}} = .72$, and $p(S)_{\text{Condition 4}} = .80$ (see Table 3).

The revised formulation connects subjects in condition one to $T^{(+)}$ by one 3- and one 4-path. (Condition two is the mirror image.) Subjects in condition three are connected to $T^{(+)}$ by one 3- and one 4-path, and to $T^{(-)}$ by one 3- and one 4-path. As given in Table 3, the reformulation predicts: $p(S)_{\text{Condition 1}} = .84$, $p(S)_{\text{Condition 2}} = .68$, $p(S)_{\text{Condition 3}} = p(S)_{\text{Condition 4}} = .76$. Thus, because the reformulation generates identical path lengths for a D not explicitly associated with C* and a C made relevant to C*, it predicts equal p(S) values for conditions three and four. The BFNZ formulation, on the other hand, predicts that actors in condition four will enjoy a status advantage over actors in condition three and should thus exhibit higher p(S) responses.

Table 3 presents the results obtained by Pugh and Wahrman, and tests for differences between conditions.[9] Note that, as predicted by both formulations, p(S) values in condition

[9] Pugh and Wahrman (1983:table 1) report mean influence scores (the average number of trials ego was influenced by alter). For consistency, our Table 3 translates these scores into p(S) values.

one (.80) were significantly higher than those observed in condition two (.71; p = .004). However, p(S) values in condition three (.74) did not differ significantly from those observed in condition four (.76). Only the revised formulation makes this prediction. The BFNZ formulation predicts higher p(S) values in condition four than condition three.

Finally, we consider a series of experiments by Cohen and her associates, who have used status characteristics theory to intervene in classroom settings characterized by status inequality (see Cohen 1982; 1993 for reviews). These researchers have conducted several replications of an experiment designed to eliminate the differential expectations associated with race and ethnicity among school children performing a collective task. In one condition, actors possessing $D^{(-)}$ (e.g., black participants) are assigned the positive state of two specific characteristics ($C_1^{(+)}$, $C_2^{(+)}$). $D^{(+)}$ actors (e.g., white participants) are not assigned any state of C_1 or C_2 (but black *and* white participants are assured that the former possess the high state of both Cs).

Following status manipulations, four participants (two $D^{(+)}$ participants and two $D^{(-)}$, $C_1^{(+)}$, $C_2^{(+)}$ participants) perform a collective task (a board game) that requires them to repeatedly reach agreement on a course of action. Dependent measures are the initiation and influence rates of each participant. Consistent with predictions of both formulations, Cohen and her associates report that assignment of $C_1^{(+)}$ and $C_2^{(+)}$ to $D^{(-)}$ participants is insufficient to overcome the extreme status advantages of $D^{(+)}$ participants (cf. Cohen and Roper 1972).

More important for our purposes is a second condition, in which *all* participants are told that both $C_1^{(+)}$ and $C_2^{(+)}$ (characteristics possessed only by $D^{(-)}$ participants) are directly relevant to task *performance* (Cohen 1982:216).[10] The BFNZ formulation connects $D^{(-)}$ participants to $T^{(-)}$ by one 4-path and one 5-path (for the diffuse characteristic), and to $T^{(+)}$ by two 2-paths (through each of two Cs directly relevant to T). (Because $D^{(+)}$ participants are not assigned the negative state of either C, no dimensionality relations exist for paths containing Cs.) The $D^{(+)}$ actor is connected to $T^{(+)}$ by one 4-path and one 5-path. The reformulation connects the $D^{(-)}$ actor to $T^{(-)}$ via one 3-path and one 4-path (for the diffuse characteristic), and to $T^{(+)}$ by two 2-paths (through the Cs directly relevant to T). The $D^{(+)}$ actor is connected to $T^{(+)}$ by one 3-path and one 4-path.

Let p denote an actor who possesses $D^{(-)}$, $C_1^{(+)}$, and $C_2^{(+)}$, and let o denote an actor who possesses $D^{(+)}$ and no state of C_1 or C_2. The BFNZ formulation predicts $e_p = .682$ and $e_o = .183$ giving p a substantial expectation advantage of .499. The reformulation predicts $e_p = .455$ and $e_o = .410$, giving p a *very* slight (or inconsequential) expectation advantage of .045. Thus, the BFNZ formulation predicts that the Cohen intervention should *reverse* patterns of influence; $D^{(-)}$ participants should initiate more acts, receive more action opportunities and more favorable evaluations from others, and be less likely to accept influence from others. The reformulation predicts no substantial difference between actors in regard to these power and prestige indicators.

Cohen (1982:table 2) summarized results from five studies that employed the direct relevance condition. Across all studies, 50.88 percent of the total influence and initiation acts were from $D^{(+)}$ participants.[11] Thus the "Cohen intervention" did not *reverse* patterns of influence among actors differentiated by race or ethnicity. Instead, as suggested by the reformulation, the intervention produced equal status interaction.

[10] That is, as in the non-relevance condition outlined above, $D^{(+)}$ participants are not assigned any state of either C, but both $D^{(+)}$ and $D^{(-)}$ participants know that the latter possess the higher states of both Cs.

[11] See Cohen (1982:216–21) for a more detailed summary and discussion of results from these experiments. Briefly, in all but one experiment, initiation/influence rates of $D^{(+)}$ participants were either equal to or slightly greater than those of $D^{(-)}$, $C_1^{(+)}$, $C_2^{(+)}$ participants. The dissimilar experiment showed consistent patterns in all but one of four conditions, in which case initiation/influence rates of $D^{(-)}$, $C_1^{(+)}$, $C_2^{(+)}$ participants were slightly greater than those of $D^{(+)}$ participants.

In sum, results from existing studies suggest that status researchers should seriously consider the prediction that diffuse characteristics have greater effects on performance expectations than specific characteristics, and that future research should include critical tests between the revised and BFNZ formulations. The section to follow builds on the foregoing review to demonstrate the divergent implications of the formulations in regard to intervention in settings characterized by status-based inequality.

DISCUSSION

For over two decades status characteristics researchers have focused simultaneously on formal theory development and application of theoretical advances to natural settings (Cohen 1993; Wagner and Berger 1993). In keeping with this tradition, this section compares several interventions suggested by the two formulations.

The most immediate implication of the reformulation is that the effects of diffuse characteristics will require stronger interventions than those suggested by the BFNZ formulation. Given that specific and diffuse characteristics are assigned equal weight by the BFNZ formulation, it suggests a simple method of eliminating inequalities based on a diffuse characteristic: through inconsistent assignment of a single C (not relevant to task performance). The revised formulation predicts that efforts to overcome the effects of a D by assigning interactants inconsistent states of a single C will not be effective.

On the other hand, the reformulation predicts that, if the inconsistently assigned states of C are relevant to similarly signed states of task ability (i.e., $C_1^{(+)} - C*^{(+)}$), the status advantage of the actor possessing the high state of D will be eliminated. The BFNZ formulation asserts that the status advantage will be *reversed*, such that the actor who possesses the low state of D will enjoy a status advantage. In fact, in the Pugh and Wahrman (1983) study outlined above, this intervention method eliminated, but did not reverse, status-based influence.

While the reformulation predicts that inconsistent assignment of a single C (not directly relevant to T) will be insufficient to countervail the effects of a D, it predicts that inconsistent assignment of *two* Cs will *equalize* interaction (see our discussion of conditions 5 and 6 of the Freese-Cohen study above). Meanwhile the BFNZ formulation predicts that this intervention will reverse patterns of influence, with the actor disadvantaged on the diffuse characteristic enjoying a status advantage after the introduction of the two specific characteristics. As noted earlier, the results of conditions 5 and 6 of Freese and Cohen's (1973) study are more consistent with the implications of the BFNZ formulation.

The foregoing types of intervention include the assignment of the low state of one or more Cs to an actor who possesses the positive state of a diffuse characteristic. However, Cohen (1982) points out that such interventions can be met with opposition from the $D^{(+)}$ actor. Considered with Lovaglia and Houser's (1996) demonstration that negative emotion can block influence attempts, Cohen's assertion suggests that only the most carefully planned methods of using inconsistent assignment of Cs will be effective. As a solution to this problem, Cohen and her colleagues assigned the positive states of Cs to $D^{(-)}$ participants, but no state of Cs to $D^{(+)}$ participants. The result, as noted earlier, was that the intervention eliminated status inequality *if* the two Cs were made directly relevant to task ability. As detailed in our discussion of these experiments, the BFNZ formulation predicts that the $D^{(-)}$ participants will exercise influence over the $D^{(+)}$ participants. The reformulation predicts equal influence and is therefore consistent with Cohen's insight: to effectively eliminate status inequality without assigning actors negative states of characteristics, the states of C must be made directly relevant to task performance. Given its effectiveness in the Cohen setting, future research might test the effectiveness of this intervention with other subject populations.

These are only a few instances of the conditions under which the two formulations disagree about the effectiveness of a given intervention. Although many other examples exist, these highlight a fundamental implication of the reformulation. If future research supports the prediction that diffuse characteristics have greater effects on performance expectations than specific characteristics, efforts to overcome the disadvantages of race, gender, and other diffuse characteristics will require interventions stronger than those implied by the BFNZ formulation.

Parsimony and Graded Expectations

While only new studies can determine whether the BFNZ or the revised formulation offers more precise predictions, predictive precision is not the only grounds on which the two formulations should be evaluated. We have offered a detailed argument that the revised formulation is logically superior to the existing formulation. Before concluding, we briefly consider the issue of parsimony.

As noted above, Berger et al. (1977) state that the predicted equal effects of diffuse and specific characteristics is a simplifying assumption. Importantly, the reformulation overcomes that assumption without an increase in theoretical complexity. Our reformulation requires no additional assumptions, graph-construction rules, or calculations, only modification of an existing assumption and graph-construction rule.

But the proposed reformulation is not the only conceivable route to the prediction that status characteristics can differ in the impact they have on performance expectations. Some researchers have suggested that status characteristics theory should incorporate the notion of "graded expectations" (Foddy and Smithson 1996; Shelly 1998). In contrast to the binary-state characteristics assumed by the BFNZ and revised formulations, graded expectations arguments assert that status characteristics (whether specific or diffuse) vary in their degree of relevance to task ability (C*). More specifically, in the BFNZ and revised formulations, all graph elements carry a weight of one. The strength of a particular characteristic is therefore a function of path length. In contrast, graded expectations arguments assign values to given characteristics (i.e., graph elements), with higher values corresponding to greater task relevance.

Though the concept of graded expectations is intuitively appealing, we find the standard (binary value) assumption more reasonable for several related reasons. First, there is no *a priori* procedure through which to choose a weight for a given characteristic. Additionally, Foddy and Smithson (1996) note that the concept of graded expectations cannot be easily incorporated into the graph-theoretic formulation of status characteristics theory. Given that the graph-theoretic formulation is the most formally developed version of the theory, we feel that, if possible, research efforts should be directed at its refinement and extension. We believe the reformulation outlined above to be an important contribution in this regard.

CONCLUSION

We have proposed a revised formulation of status characteristics theory. Our reformulation is simple but carries important implications. First, we offered a detailed argument that application of the burden of proof assumption is inconsistent with the concept "generalized expectation state." The reformulation corrects the inconsistency. In so doing, it removes a simplifying assumption invoked in previous applications of the theory, which states that all status characteristics have equal effects on performance expectations. Importantly, the removal of the simplifying assumption by the reformulation entails no loss of parsimony.

In addition, the revised formulation offers competing predictions for cases in which interactants are differentiated by one or more diffuse characteristics. Specifically, it predicts that diffuse characteristics have greater effects on performance expectations than specific characteristics. Given the deleterious effects that diffuse characteristics such as race and gender often have on expectations for competence (e.g., when employers assess promotion merit), we consider this an important feature of the reformulation.

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