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### **An Illustration of an Aggressively Simplifying Strategy in Theoretical Analysis**

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#### **Extended Abstract**

This paper advocates for an aggressively simplifying strategy in theoretical analysis and uses an analysis of Ridgeway's (1991) status construction theory to illustrate the power of this strategy.

The emergence of personal computers and their increasing speed and memory have made it possible to simulate increasingly complex theoretical models. However, that we are able to use a computer to simulate a model and determine the patterns implied by the model does not guarantee that we will be able to understand the logical structure of the explanation the model offers—does not guarantee that we will understand how the assumptions of the model (combined with initial conditions and parameter values) imply the outcomes they imply. Computers make it possible for us to simulate models that are too complex for us to understand and make it possible for

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us to identify implications of these models without understanding how our models imply these outcomes.

Although we should use computer simulation and numerical analysis when these methods can help us, we should not let the power of computers to simulate complex models distract us from constructing and analyzing the simplest possible models that capture the theoretical ideas we wish to examine. Computers have not changed the fact that simple models are much easier for us human sociologists to understand than are complex models.

I use a theoretical analysis of Ridgeway's status construction theory to illustrate the power of a simplifying strategy. Ridgeway asked: How could a nominal characteristic such as sex or race acquire status value? In other words, how could consensual beliefs that members of one category are generally more competent and worthy than members of another category emerge? Ridgeway developed status construction theory as an answer to this question. The core argument is that resource differences within small groups produce interactional inequalities and perceived differences in competence. When a perceived difference in competence is associated with a nominal difference between the individuals within a micro-interactional context, the individuals can develop status beliefs associating different states of the nominal characteristic with different levels of competence. If similar status beliefs about a nominal characteristic become consensually held within a society, the nominal characteristic is said to have acquired status value. Ridgeway argued that consensual status beliefs can emerge if there is a system-level correlation between the nominal characteristic and the resource, but not if these variables are uncorrelated.

We have analyzed this argument using a series of ever simpler models. These analyses have advanced and dramatically changed our understanding of Ridgeway's original argument and of what can account for the emergence of consensual status beliefs. This paper summarizes insights that five of these models have provided.

First, we use a very simple representation of Ridgeway's theory to show that the resource (R) does not need to be correlated with the nominal characteristic (N) for consensual status beliefs about the nominal characteristic to emerge. We use this representation as the basis for a fully specified dynamic model. Our analysis of this model shows that not only is possible for consensual status beliefs to emerge when there is no correlation between N and R, but that the states of consensual status beliefs are attractors.

Although we could see how it was possible for consensual status beliefs to emerge when there was no correlation between N and R, we still did not understand why the states of consensual status beliefs were attractors. Our first step in trying to understand why states of consensual status beliefs were attractors was to remove individual differences with respect to resources (to remove the variable R) from our model. This model too tended toward the states of consensual status belief, demonstrating that resource differences, previously thought to be essential to the status construction argument, are not essential.

Understanding why the states of CSB are attractors is facilitated by comparing two models even simpler than the above models. Comparing these models suggests the following understanding of how two micro-level mechanisms, each of which was part

of Ridgeway's explanation, are, in combination, sufficient to imply a system-level tendency toward consensual status beliefs. One of these mechanisms is *status belief diffusion*: A person who has no status belief about a characteristic can acquire a given status belief about that characteristic from interacting with one or more people who have that status belief. The other mechanism is *status belief loss*: A person who has a status belief about a characteristic can lose that belief from interacting with one or more people who have the opposite status belief. These mechanisms imply that a status belief and its opposite belief are lost at equal rates and are acquired at rates proportional to their prevalence. Therefore, if a status belief ever becomes more prevalent than its opposite (any non-zero difference is sufficient), the more prevalent status belief is expected to increase in prevalence until every person holds it.

Although this explanation is simple, it has not been obvious. The mechanisms of diffusion and loss played roles in Ridgeway's original formulation and in subsequent treatments of status construction theory. Nevertheless, the fact that these mechanisms together are sufficient to imply a tendency toward consensual status beliefs remained unrecognized. I argue that an aggressively simplifying strategy has been instrumental in revealing mechanisms of status belief diffusion and status belief loss are together sufficient to imply a tendency toward consensual status beliefs.

### References

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