

Reply to Anonymous - Invited reader's report September 23, 2013

We thank the Invited Reader for considering our paper so carefully. We share the Invited Reader's concerns, many of which underlie motivations for our research, and appreciate the opportunity to improve our paper. We particularly thank the Invited Reader for identifying errors of content and noting shortcomings in our literature review, especially Montero Sefton and Zhang 2008.

We will update the paper with the following corrections, additions, and some of these clarifications if the Invited Reader and others find them acceptable.

A number of experiments in bargaining theory incorporate elements of various models in the structure of their experiments (e.g. Fréchette, Kagel, Morelli 2005 Nominal bargaining power... JPE 2005; Frechette, Kagel and Morelli Gamson's Law... "GEB 2005; Diermeier and Morton 2005). Diermeier and Morton 2005 perform a computerized experiment to evaluate the goodness of fit between a game theoretic idea and experimental outcomes. They compare empirical results to multiple theoretical constructions.

Some of these investigations of bargaining theory create experimental environments tailored to particular aspects of bargaining models. Baron-Ferejohn models represent bargaining as a series of proposals from players selected at random then approved or rejected by players with a majority of votes. These sequences are directly implemented in bargaining experiments. Gamson's Law predicts what coalitions will form and how goods are divided between parties within a coalition.

The focus of our research differs from those bargaining theory experiments in that the latter test how well various theories or models predict human behavior in reasonably natural environments. These bargaining theories make contentions about observable results including formation of coalitions and divisions of gains within coalitions. Frechette, Kagel and Morelli (Gameson's Law versus Non-Cooperative Bargaining Theory *Games and Economic Behavior* 2005) *test* Gamson's Law in the institutional framework of demand bargaining, testing the implication that Gamson's Law holds in all institutional settings.

In contrast, our experiments evaluate how closely human divisions of gains may approach SSPI results, given conditions approximating the axioms of the Shapley Value. Our research endeavors to evaluate the applicability of the SSPI to account for the power embedded in blocks of votes, in order to isolate effects of votes in themselves from other aspects of human interaction. The bargaining theory experiments endeavor to evaluate how well such theories account for human behavior including those other aspects of interaction. Bargaining theory does not assume symmetry.

The SSPI and Value are not bargaining theory in the sense of Gamson's Law, demand bargaining and the Baron-Ferejohn model. The SSPI and Value only address whether or not power will remain constant with changes in nominal vote shares when symmetry is maintained.

I find Esposito et al. (2010) interesting, especially in light of Diermeier and Morton (2005) and personal experience with experiment-based teaching. However the authors noted their paper as "Very Preliminary", so I feel that public comments are inappropriate.

The SSPI, as a normalization of the Shapley Value, gives the value of participating in a game given certain conditions. Those conditions do not include the presence of focal points. Focal points are products of perceptions of vote blocks rather than of the size vote blocks *per se*. If the SSPI coincided with voting outcomes in the presence focal points, the meaning of that co-incidence would be unclear. For example it might indicate that the Value was more general than its axioms imply; perhaps it would indicate that focal points do not affect outcomes.

However, providing an example of raw results is appropriate at least in these discussions. Since the p profiles have the most observations, we computed the mean of earnings of the largest player across the p profiles: \$4.92, 98.4% of the SSPI across all rounds; and for the rounds with all players experienced \$4.98, 99.7% of the SSPI.

The SSPI predicts that changing the “nominal” vote profile will have no effect on power only if the change does not violate symmetry by affecting matters that can influence voting outcomes -- beyond the power in the vote blocks themselves. Perceptions of vote blocks affect voters beyond the power of vote *per se* and so violate symmetry. Focal points are ways that such perceptions can affect outcomes.

The Invited Reviewer is correct; excluding competitive subjects may affect the external validity of the experiment. The “external” in this case refers to more natural environments. We would be interested in the effects of competitive subjects on vote outcomes. We are interested in the effects of many natural variables on vote outcomes. That interest is why we involved ourselves in the matter of power embedded in vote-blocks *per se*. With confidence in the SSPI, we can introduce heterogeneous subjects (such as differing psycho-social orientations) to investigate the effects of the conditions that vary and perhaps of heterogeneity itself.

Our data is not suited to investigating the effects of the offer-bids we gathered to select subjects for withdrawing from the experiment (when too many students arrived at a particular session). We excluded much of the relevant variation in order to achieve effectively homogenous subjects. Perhaps such difference would be interesting to the objectives and structure of further experiments.

The Invited Reviewer is correct, veto power does not in itself violate Shapley’s axiom of efficiency. Veto power that can, and sometimes does, result in lower payoffs in total to all players violates efficiency. Thank you; the correction improves transparency of the example.

I will correct the lines in Table 1.

Thank you very much,

Chris