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# On the influence of hard leverage in a soft leverage bargaining game: The importance of credible claims



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#### ABSTRACT

What makes a bargaining proposal credible? We study how hard leverage (binding commitment) influences soft leverage (appealing to a focal point) in a rich-context bargaining game known to exhibit competing claims to focality. In three treatments, our experiment varies one bargainer's ability to commit, holding the soft leverage condition fixed. As in previous studies, we observe that opening offers are consistent with the available soft leverage. The influence of hard leverage is most evident in the concessionary stage. Hard and soft leverage interact to influence outcomes: Hard leverage advantages its holder, yet settlements largely stay between the two focal points. We posit that focal points induce mutual expectations of bargainer social preferences that, when combined with the Nash bargaining solution, imply the comparative statics concerning the settlements observed. A similarly modified version of the Zeuthen–Harsanyi model of the bargaining process, agrees with the comparative statics on opening offers and concessions.

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[E]ach party will make a concession at a given stage of the negotiation if and only if he thinks he has at least as much "reason" as his opponent has to yield ground at that point.

[John C. Harsanyi (1956)]

[I]t often looks like the ultimate focus of agreement did not just reflect the balance of bargainer power but provided bargaining advantage to one side or the other. . . . One has to have a reason for standing firmly on a position.

[Thomas C. Schelling (1960)]

#### 1. Introduction

What makes a bargaining proposal credible? Where will a bargainer make a stand and where will he back down? Both Harsanyi and Schelling argued that the answer has to do with reasons. Harsanyi argued that the reasons could be deduced from the mathematical game form and bargainer rationality. From this view, we derive hard leverage strategies for establishing credibility, strategies such as binding commitments. Schelling argued that focal points – context specific variables extraneous to the mathematical definition of the game form – can provide bargaining advantage as well. Focal points shaped by "analogy, precedent . . . and who the parties are and what they know about each other" among other

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variables (Schelling, p. 57). Focal points give rise to *soft leverage* strategies for establishing credibility, soft in the sense that they rely on *mutual* perceptions to coordinate bargainer expectations.<sup>2</sup>

In the economics literature, hard and soft leverage live largely separate lives. Soft leverage strategies have been investigated mostly in bargaining games with symmetric strategy spaces (ex., Roth, 1995).<sup>3</sup> Hard leverage strategies play the central role in asymmetric bargaining games, particularly those where commitment power is distributed unequally (ex., Tadelis, 2013, chapter 11). One reason to wonder whether this division of labor characterizes the entire relationship hard and soft leverage share is that many if not most asymmetric bargaining encounters take place in a rich context. A 'rich context' is one that admits appeal to analogy, precedent, etc. In a rich context, even if one side in the negotiation has a hard leverage advantage, bargainers can find grist to fashion soft leverage strategies as well.

In fact, a rich context typically admits competing claims to focality. To give an example that will be relevant here, one bargainer might argue for a 50–50 split while another might argue for an asymmetric split based on precedent. Studies suggest that competing focal points can act to coordinate expectations. In assessing a series of bargaining experiments conducted with colleagues, Roth (1985) conjectured that, "[The] bargainers sought to identify initial bargaining positions that had some special reason for being credible, and that these credible bargaining positions then served as *focal points* that influenced the subsequent conduct of negotiations." Some of the games ended in a settlement at one or the other focal point, while other settlements appeared as compromises between focal points. Gächter and Riedl (2005) studying a rich context bargaining game using a novel experimental design, found that most observed settlements appear as compromises between focal claims. Gächter and Riedl (2006) found that varying the asymmetric focal point leads to a shift in the distribution of settlements.

The major goal of our experiment is to generate data that informs us of what a theory that accounts for both soft and hard leverage need explain. We fashion our guiding hypotheses from the robust patterns of behavior previously observed in symmetric and asymmetric bargaining game experiments. The baseline treatment is a symmetric bargaining game. Bargainers are given a fixed amount of time to communicate and reach a mutual agreement in a free form setting. We then create an asymmetric bargaining game by giving the high performer the option, which he can exercise at his discretion during the bargaining, to make a final offer that cannot be revoked (hence the high performer has full commitment power). A third treatment then draws the bargaining game closer to one that is fully asymmetric: The high performer is restricted to a final offer that the low performer must either accept or reject, with no further communication, eliminating the ability of the lower performer to ask for concessions. We examine how treatment manipulations affect both settlements and the process of the negotiations. To more fully gauge the coordinating influence of the focal points and commitment option, we ask bargainers prior to bargaining, what they think a neutral arbitrator would judge to be a fair settlement.

From the data, the observed influence of hard leverage on soft leverage runs as follows: The critical influence of soft leverage is on fairness judgments and on the opening offers made by bargainers. The influence of hard leverage is found in concession behavior. A bargainer facing a bargainer with the final offer option is the one more likely to bend in the concession process. Hard leverage holders do best in the final offer treatment (with modal offers and rejection rates below those in a typical ultimatum game).

None of our original hypotheses provides a totally satisfactory explanation for what we observe. Instead, we propose a simple model in which focal points induce mutual expectations of the social preferences of the bargainers. These social preferences are a generalization of those used to explain bargaining outcomes in low context bargaining games. Modifying the Nash bargaining solution (Nash, 1950) to reflect these preferences implies the comparative statics we observe regarding settlements. Modifying the Zeuthen–Harsanyi bargaining model (closely associated with the Nash solution in the literature) in a similar manner implies the comparative statics we observe with regard to opening offers and concessions.

To the best of our knowledge, our work is the first to study both hard and soft leverage in rich context bargaining. Our work complements other recent studies of the influences on bargaining settlements. Birkeland (2013), in a bargaining game with production and arbitration, shows that settlements can be approximated by the modal focal outcomes bargainers attribute to the arbitrator pool. Anbarcı and Feltovich (2013, 2014) study behavior in bargaining games that differ by disagreement outcomes; and find that settlements are substantially less sensitive to the level of disagreement payoffs than standard theory suggests. Our results share a similar flavor in that we find that hard leverage is less effective than one would expect. Rode and Le Menestrel (2011), using dictator and repeated Nash demand games, find that distribution of power influences both fairness judgments and distributive decisions.

The organization of the paper is as follows: Section 2 describes the experimental design and hypotheses. Section 3 reports the results. Section 4 presents the modified Zeuthen–Harsanyi model and discusses how it fits with our results. Section 5 presents concluding remarks.

<sup>&</sup>lt;sup>1</sup> In the negotiation literature (ex., Fisher et al., 2011), common focal points include market value, ethical standards, scientific judgment, professional codes, efficiency, cost, legal precedent, tradition, reciprocity and fair procedures.

<sup>&</sup>lt;sup>2</sup> See Innocenti (2008) for a historical account of Harsanyi's and Schelling's contrasting views on bargaining.

<sup>&</sup>lt;sup>3</sup> Focal points are also central to the study of tacit bargaining; ex., Isoni et al. (2013) and Embrey et al. (2014). Here we focus on direct (or explicit) bargaining; ex., Isoni et al. (2014).

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