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Knowledge of Opponents' Power in Power-Asymmetric Negotiations: Whose Knowledge Shapes the Structure of Outcomes?

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ABSTRACT

This article focuses on dyadic negotiations in which negotiators have *asymmetric* best alternatives to the negotiated agreement (BATNAs). The article sets out to contribute to this domain, arguing that it is important to consider negotiators' knowledge of their opponents' BATNAs. The study uses a job negotiation simulation and examined the effects of the knowledge of opponents' BATNAs on agreement efficiency (indexed by joint outcome) and negotiators' abilities to claim values (bargaining strength). In a 2 x 2 experiment, findings indicated that strong negotiators' knowledge of opponents' BATNAs increases their bargaining strength but hinders their efficiency; weak negotiators' knowledge alone reduces their bargaining strength but increases efficiency; and the detrimental impact of strong negotiators' knowledge on efficiency outweighs the benefit of weak negotiators' knowledge. The impact of knowledge on efficiency depends on which party has access to it. Paradoxically, weakness leads to efficiency and strength can lead to "winning" an impoverished prize.

Keywords: Negotiation, Best Alternative to a Negotiated Agreement (BATNA), Power Asymmetry, Knowledge

INTRODUCTION

The use of Best Alternative to a Negotiated Agreement (BATNA) is among the basis of negotiations. A BATNA indicates what a negotiator could get if he or she failed to reach an agreement (Fisher & Ury, 1981). It is seldom the case that both parties in a negotiation have equal BATNAs. In most bargaining situations, negotiators' BATNAs are different in quality and attractiveness. Moreover,

negotiators commonly do not know what their opponents' position is. To assume that negotiators have equal BATNAs and complete knowledge about negotiation situations entails a significant loss of generality. It is not surprising, therefore, that the study of negotiation behaviour has since the 1990s examined the effects of power-asymmetries (or BATNA-asymmetries) on negotiated outcomes (Anderson & Thompson, 2004; Brett, Pinkley, & Jackofsky, 1996; Giebels, De Dreu, & Van De Vliert, 2000; Kim & Fragale, 2005; Kray, Reb, Galinsky, & Thompson, 2004; Magee, Galinsky, & Gruenfeld, 2007; Mannix & Neale, 1993; Pinkley, 1995; Pinkley, Neale, & Bennett, 1994; Roloff & Dailey, 1987; Van Kleef, De Dreu, Pietroni, & Manstead, 2006; Wei & Luo, 2012; Wolfe & McGinn, 2005) and how knowledge of the opponents' situation shapes negotiations (Brodt, 1994; Handgraaf, van Dijk, Riel, Henk, & De Dreu, 2008; Pietroni, Van Kleef, De Dreu, & Pagliaro, 2008; Roth & Murnighan, 1982; Thompson, 1990c, 1991; Thompson & Hastie, 1990; Van Beest, Steinel, & Murnighan, 2011). However, research on power asymmetries and knowledge about opponents' positions seems to have proceeded independently.

It is uncertain whether knowledge of opponents' BATNAs helps or hurts the development of efficient agreement in BATNA-asymmetric negotiations. This is an important question, since a large body of research has suggested that negotiators often settle for inefficient agreement, even when there are other possible agreements that can make benefit them without hurting their opponents (Pinkley, Griffith, & Northcraft, 1995; Thompson, 1991, 2001). Although Handgraaf et al. (2008) have shown that in an ultimatum game the knowledge of opponents' positions affects the outcomes, little research has examined the role of knowledge about opponents' BATNAs in variable-sum negotiations. The primary research questions to be addressed are: How does knowledge of BATNA-asymmetries affect agreement efficiency? Under which conditions are dyads more (or less) likely to reach efficient agreements? This study will therefore consider whether this knowledge, when given to different members of the dyad, affects both distributive and integrative negotiations.

BATNA as a Source of Power

I view that the value of a negotiator's BATNA is a source of power, from which theoretical and empirical attention has been drawn to explore the effect of BATNA on negotiators' performance (Fisher & Ury, 1981; Greco, Branca, & Morena, 2011; Li, Vo, Kowalczyk, Ossowski & Kersten, 2013; Thompson, Wang, & Gunia, 2010). The possession of an attractive BATNA not only protects a negotiator from a poor

agreement but also helps generate a good one (Fisher & Ury, 1981). When negotiators have different BATNAs, parties with a more attractive BATNA are often considered to have greater power over their weaker counterparts, given that reaching a deal requires a mutual agreement and that weak negotiators have a greater reliance on the negotiation to obtain advantage (Fisher & Ury, 1981; Lewicki & Litterer, 1985; Pinkley, 1995; Pinkley et al., 1994; Raiffa, 1982). In this article, negotiators with a relatively more attractive BATNA will be referred as to **strong** negotiators, and those with a relatively less attractive BATNA will be referred as to **weak** negotiators. This article examines whether knowledge of opponents' BATNAs affects strong and weak negotiators' abilities to claim value (individual level) and negotiation dyads' abilities to create value (dyadic level).

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Negotiators' Perceptions of Others' BATNAs Prior to Negotiations

In many cases, information about opponents' positions is not available to negotiators, yet negotiators may have expectations about those opponents' payoff structure, interests, BATNA, for example. Given this lack of common knowledge we are left to wonder how negotiators' expectations of their opponents' position are formed. The experimental psychological and economic literature on the importance of information about opponents may shed light on this issue (Roth & Malouf, 1979; Roth, Malouf, & Murnighan, 1981; Thompson & Hastie, 1990).

Roth and Malouf (1979) use binary lottery games in which players bargain over the distribution of lottery tickets, to investigate negotiators' perceptions. Players who only know their own prize generally split the tickets equally, although they have different personal prizes. In contrast, players with full information (knowledge of theirs and their opponents') tend to make an agreement that gives equal expected value for both players. Roth and Malouf (1979) suggest that when players have no information about their opponents' prize, they tend to assume that their opponents have the same prize that they do.

Another stream of research considers how negotiators' expectations of opponents' preferences across issues are formed, when negotiations involve multiple issues and contain potential for integrative agreements (Raiffa, 1982; Thompson, 1990b, 1991; Thompson & Hastie, 1990). Thompson (1990) and Thompson and Hastie (1990) have shown that when no information about opponents is available, negotiators often assume that the other party's intensity of preferences across issues is the same as their own. Together, these findings are consistent with Thompson and

Hastie's (1990) "projection hypothesis"—negotiators tend to base their perceptions of others on their own situations, which may lead to inaccurate estimations about opponents. Knowledge of opponents' positions is therefore of great importance.

It is unclear whether negotiators' perceptions about their opponents' BATNAs follow the prediction of Thompson and Hastie's (1990) projection hypothesis. In light of the effects of information about opponents' payoff structures or prizes on negotiated outcomes, I argue that a better understanding of how negotiators' perception of opponents' BATNAs is formed may be important when no information of opponents' BATNA is available in BATNA-imbalanced negotiations. It may be that negotiators use their own BATNAs as an anchor when guessing their opponents' BATNAs before negotiation begins. If the projection hypothesis is correct, knowledge of opponents' BATNAs in BATNA-asymmetric negotiations may play an important role in shaping the structure of negotiated outcomes since it allows for interpersonal comparisons of BATNAs. As a result, it is possible that knowledge of opponents' BATNAs changes how negotiators (weak or strong) perceive the dynamics of bargaining structure in BATNA-asymmetric negotiations, which ultimately impacts negotiated outcomes.

Pinkley, Neale and Bennett (1994) authored the first study that tests this contention. They hypothesised that negotiators' perceptions of their opponents' BATNAs are anchored to their own, because negotiators are inclined to make insufficient adjustments from their own BATNAs when making assumptions about their opponents'. While this claim sounds plausible, this hypothesis was partially supported. This may be because negotiators' perceptions of the other side's BATNA were measured only at the end of the experiment. In retrospect, the BATNA-asymmetric situation may appear obvious to the subjects. As a result, they would therefore more accurately report their opponents' BATNAs, regardless of the amount of pre-negotiation information they had.

The current study will test the projection hypothesis and measure how negotiators' BATNAs affect their perceptions of opponents' BATNAs *before* negotiations begin. The speculation is that in BATNA-asymmetric negotiations, both strong and weak negotiators are likely to anchor to the quality of their own BATNAs when making judgements about their opponents'.

Hypothesis One: Strong negotiators' perceptions of their opponents' BATNAs will be significantly higher than weak negotiators' perceptions of opponents' BATNAs, when no other information about their opponents is given.

Knowledge of BATNA-Asymmetries and Bargaining Strength

In BATNA-asymmetric negotiations, strong negotiators are considered to have greater bargaining strength—the ability to claim bargaining surplus—than weak negotiators (Kim & Fragale, 2005; Komorita & Leung, 1985; Magee et al., 2007; Pinkley et al., 1994). However, Pinkley (1995) found that possessing an attractive BATNA—it was worth 4,500 points but the compromise solution (i.e. settling at the mid-point for each issue) was worth only 2,400—does not help negotiators to attain better individual outcomes (Pinkley, 1995). This surprising finding makes us wonder under what circumstances strong negotiators show their BATNA advantage in bargaining. A helpful starting point is to examine the differences in the literature.

One substantial difference is the amount of knowledge about BATNA-asymmetries that negotiators hold. Strong negotiators were not aware of their BATNA advantage in Pinkley's (1995) study. Given this lack of knowledge of opponents' BATNAs, interpersonal BATNA comparisons were not easily made. In contrast, in studies suggesting that strong negotiators have greater bargaining strength, either it is unclear from descriptions of the experimental design to what extent subjects shared information about each other's BATNA during negotiations, or complete information about BATNA-differences is assumed (Kim & Fragale, 2005; Komorita & Leung, 1985; Magee et al., 2007; Pinkley et al., 1994).

One speculation is that possession of an attractive BATNA alone is insufficient to increase negotiators' bargaining strength *vis-à-vis* their opponents. For strong negotiators' better quality of BATNA to convert into a higher proportion of bargaining surplus, an opportunity for interpersonal BATNA comparisons is important. As Hypothesis One predicts, negotiators tend to assume that they and their opponents possess a similar BATNA. Providing strong negotiators with knowledge of BATNA-asymmetries will justify their demand of a larger share of the resources. Thus knowledge of BATNA-asymmetries being made available to strong negotiators may mediate their bargaining strength in a predictable way.

Hypothesis Two: When strong negotiators are the only ones informed of both BATNAs, they will receive a higher proportion of the bargaining surplus than when they are unaware of others' BATNAs.

In contrast, it is postulated that knowledge of BATNA-asymmetries, when available to weak negotiators, affects their bargaining strength in a different way. When weak negotiators know that they have greater reliance on the existing negotiation than their stronger counterparts are, they will demand less, thus garnering a smaller share of the resource pie than uninformed weak negotiators. Pinkley (1995)

empirically tested this conjecture, and for the sake of completeness, this study will attempt to replicate this finding and examine the impact of knowledge of BATNA-asymmetries on weak negotiators' bargaining strength.

Hypothesis Three: When only weak negotiators are informed of opponents' BATNAs, they will receive a smaller proportion of the bargaining surplus than when they are uninformed.

Knowledge of BATNA-Asymmetries and Agreement Efficiency

Studies have shown that BATNA-asymmetries can affect agreement efficiency (indexed by joint outcomes). Pinkley et al. (1994) and Roloff and Dailey (1987) found that negotiation dyads with unequal BATNAs reach more efficient agreements than those with equal BATNAs, although some studies using different power manipulations showed that dyads with an equal balance of power reach more efficient agreements than those with an unequal balance of power (Mannix & Neale, 1993; McAlister, Bazerman, & Fader, 1986). Pinkley et al. (1994) conducted a comprehensive examination of the relationship between BATNA-asymmetries and agreement efficiency. In their study, three levels of BATNAs were manipulated: high BATNA (4,500 points), low BATNA (2,200 points) and no BATNA (0 points). A compromise was worth 2,400 points. Pinkley et al. (1994) suggest that dyads of one party with no BATNA and another with an attractive BATNA but less attractive than the compromise solution (i.e. low BATNA), generate a sufficient imbalance in BATNAs in order to improve negotiation efficiency. Two experimental psychological studies have attempted to explain why efficiency is found to be greater in situations of asymmetric BATNAs. Each explanation is described below, followed by the study limitations.

Pinkley (1995) argues that having an attractive BATNA may give strong negotiators more freedom to find creative ways of expanding the resource pie (Kim, Pinkley, & Fragale, 2005; Pinkley, 1995). Pinkley (1995) found that strong negotiators' recognition of their own BATNAs improved dyads' ability to create joint benefit. Note that the value of strong negotiators' BATNA was worth 4,500 points but a compromise solution generated only 2,400. As a result, strong negotiators were compelled to make trade-offs across issues in order to gain a sufficient surplus that was more appealing than their own BATNAs.

Excluding the compromise solution as a viable outcome is also debatable. A large body of research on negotiations shows that negotiators often settle for sub-optimal agreements, even when other agreements might be better for both parties

(Pinkley et al., 1995; Thompson, 1990a, 1991; Thompson & Hastie, 1990). Central to Pinkley's (1995) study was an exploration of why dyads with unequal BATNAs were more capable of reaching efficient agreements than those with equal BATNAs, even though the compromise solution was a feasible outcome. Therefore, it would make sense to include the compromise solution as a possible outcome in any replication of Pinkley's (1995) study.

More importantly, Brett et al. (1996) have shown that providing one member of the dyad with an attractive BATNA could not by itself improve the dyad's ability to reach efficient agreements. This could mean that the possession of an attractive BATNA is necessary, but not sufficient, to grant strong negotiators this freedom. Note that negotiators were asked not to reveal their BATNAs to opponents and that knowledge of opponents' BATNAs was never revealed to strong negotiators in Pinkley's (1995) and in Brett et al.'s (1996) experimental design. Other studies suggesting BATNA-asymmetries improve agreement efficiency did not impose such a restriction (Pinkley et al., 1994; Roloff & Dailey, 1987). It is possible that knowledge of BATNA-asymmetries is essential to provide strong negotiators with the freedom required for reaching efficient agreements, because it allows for interpersonal BATNA comparisons. Here, Pinkley's (1995) explanation is refined and re-tested.

Hypothesis Four: When only strong negotiators are informed of both BATNAs, agreement with higher joint gain will be reached than when they are not informed.

Roloff and Dailey (1987), in contrast, argue that weak negotiators are under pressure to develop creative solutions in order to make the negotiated settlement more appealing than their opponents' already attractive BATNAs but without losing the entire bargaining surplus to their opponents. This can improve a dyad's ability to find and make integrative trade-offs, thereby increasing agreement efficiency (Roloff & Dailey, 1987). Pinkley (1995) tested this hypothesis and suggested that weak negotiators' pressure stems from their knowledge of BATNA-asymmetries.

However, the manner in which weak negotiators' knowledge was manipulated in Pinkley's (1995) design means that Roloff and Dailey's (1987) hypothesis cannot be categorically rejected. For example, under one experimental condition ("Actor knowledge and opponent knowledge"), knowledge of BATNA-asymmetries was given to weak negotiators not by the experimenter, but by their stronger opponents, casting doubt on the credibility of this information. Under another condition, weak negotiators were told that their stronger opponents were not aware of their own attractive BATNAs. Weak negotiators could then disguise themselves as a high-BATNA member of the dyad, reducing the effect of BATNA-asymmetries. More

importantly, weak negotiators under this condition may have been under little or no pressure to create efficient agreements, in order to keep their stronger counterparts at the table. Therefore, it is likely that the manipulation of opponents' knowledge would not be effective as intended.

This logic can be extended and generalised. When it is common knowledge that strong negotiators do not know both BATNAs, then weak negotiators are free to make any assertion about their own BATNAs without fear of contradiction. In other words, *weak negotiators, when knowing that strong negotiators only know their own BATNAs but not their opponents' BATNAs, are free to behave in the same way as their stronger counterparts*.

This research re-examines Roloff and Dailey's (1987) explanation, removing two variables in Pinkley's (1995) design. First, for knowledge of BATNA-asymmetries to generate pressure on weak negotiators, non-common knowledge of negotiators' knowledge state (i.e. negotiators do not know what information the others hold) is assumed. Moreover, to sustain credibility of knowledge of BATNA-asymmetries, this knowledge will be provided directly by an impartial third party.

Hypothesis Five: When only weak negotiators are informed of both BATNAs, agreement with higher joint gain will be reached than when they are not.

In addition to the existing explanations, this study explores the possibility that both members' recognition of BATNA-asymmetries is essential to the process by which efficient agreements develop. It is possible that complete knowledge of BATNA-asymmetries has an impact on negotiation efficiency as both parties can draw interpersonal BATNA comparisons (the co-existence of weak negotiators' pressure and strong negotiators' freedom may be required).

Hypothesis Six: Settlement with greater efficiency will be obtained when each party is informed of the other's BATNA than when they are not.

In short, this study will examine how negotiators' perceptions of opponents' BATNAs form when no information is available, and will seek answers to the main questions as to whose knowledge of BATNA-asymmetries (strong, and/or weak negotiators' knowledge) affects agreement efficiency and negotiators' bargaining strength. The baseline model is that negotiators know only their own BATNAs.

METHODOLOGY

Sample

Two hundred and twenty-four undergraduate and master students at London School of Economics and University College London participated in a "negotiation

experiment". The sample consisted of 122 men and 102 women whose ages ranged from 18 to 41 years and a mean of 24.54 (SD = 3.50) years. No effects for gender and age of participants on agreement efficiency were found ($F(1,222) = 2.866$, $p > 0.05$; $F(1,158) = 2.073$, $p > 0.05$). Participants from the London School of Economics were recruited via e-mail advertisement and those from University College London were recruited using poster advertisement. As an incentive, subjects were informed that the money that they received at the end of the experiment was related to the number of points they earned: they received £0.10 for every 100 points they earned.

Procedure

Participants were randomly assigned to experimental conditions and roles, and received the general information that described the negotiation task on a paper handout before the exercise began (see Appendix One for details).

The experimenter provided subjects with specific negotiation instructions, a "payoff" chart, details about their role and own BATNAs, information about opponents' BATNAs (if applicable), and a short quiz to ensure that subjects understood their BATNAs and payoff chart. The instructions, information, and quiz were provided in writing, on paper. Subjects were tested individually before being paired with another subject to negotiate. The experimenter checked answers to every question; subjects who answered incorrectly were asked to answer the question again. Most subjects were correct on their first attempt; all were correct on their second attempts. Subjects negotiated for a maximum of 30 minutes; they negotiated face-to-face in private rooms, out of earshot of other groups; their interaction was unrestricted except that materials informed participants that the payoff schedule was confidential and should not be shared with the other party.

All participants were asked to complete a questionnaire. It included some demographic questions and elicited each participant's perceptions of the other party's BATNAs, which was given after reading initial role materials and receiving details about their own BATNAs. After the pilot study, the questions regarding perceptions of others' BATNAs were rewritten and revised for clarity. The questionnaire used in this study was the second version. After the negotiation task, they were debriefed about the purpose of the experiment.

Negotiation Task

The negotiation simulation used in this study was a variable-sum task. The negotiation situation involved an employer and an employee resolving six issues in a job contract. Pairs negotiated a contract including different options on the following

issues: salary, annual leave, bonus, starting date, medical coverage and company car. Appendix Two describes all the possible ways participants could settle this negotiation. There were several alternatives for each issue. Each party had different preferences for alternatives defined by the points the negotiator would receive if that alternative was agreed upon.

The task included three types of issue: distributive, compatible and integrative (Appendix Two). Salary was a purely distributive issue; when one party gains, the other party loses in a direct, fixed-sum fashion. The starting date was one in which both parties have perfectly compatible interests. In this negotiation task, there were two fully integrative trade-offs possible, in which preferences are inverse so that one party places a higher value on one issue and a lower value on another. Negotiators had different priorities for the annual leave and bonus issues and could logroll these to maximise joint gain (employer giving employee a larger bonus for a shorter annual leave). Additionally, they had different priorities pertaining to medical coverage and the company car and could trade-off these issues in the most profit-maximising way. Therefore, this negotiation simulation allowed for greater variation in integrative outcomes.

Negotiators could earn from 0 to 12,800 points. An obvious compromise solution would yield each negotiator 6,400 points for a joint total of 12,800 points. A more mutually beneficial agreement was possible if negotiators made trade-offs between issues and realised the same preference for one of the issues. The maximum possible joint outcome was increased to 18,800 points.

BATNAs and Magnitude of BATNA-Asymmetries

Strong negotiators were assumed the role of employer; weak negotiators took the employee role. Participants were randomly assigned to roles. To create BATNA-imbalances, each employer was randomly assigned to an employee so that each dyad was constituted of one employer and one employee. One might argue that employers (employees) always being strong (weak) negotiators may have created more than just BATNA differences, and any differences between strong and weak negotiators may be attributable to their roles rather than their BATNAs. However, past research suggests that this is unlikely. The current study concerns the absolute difference *across* experimental condition. As a result, any difference in role should not interfere with the validity of hypotheses.

Employers would receive 6,000 points if no agreement was reached, and employees would receive 1,200. Employers' BATNA was slightly less than the value

of compromise solution, 6,400 points. In most cases, negotiators at least have an alternative (which may not be attractive) prior to negotiations. To improve the external validity of the current study, a weak BATNA was assigned to weak negotiators.

Information and Non-Common Knowledge States

Strong and weak negotiators always knew their own BATNAs, but they were not told by the experimenter (a) if information about their own BATNAs had been revealed to their opponents or not, (b) if their opponents were informed of their BATNAs even when they were informed of their opponents' BATNAs (in the relevant conditions), and (c) their opponents' payoff schedule.

Experimental Manipulations

Knowledge of BATNA-asymmetries was manipulated. First, employers were either informed of employees' BATNAs (strong negotiators' knowledge) or not (no strong negotiators' knowledge). Second, employees were either informed of employers' BATNAs (weak negotiators' knowledge) or not (no weak negotiators' knowledge). All possible combinations of these two types of information levels resulted in four experimental conditions or a fully crossed 2 x 2 factorial design, to which negotiation pairs were randomly assigned: (a) neither player knew the opponent's BATNA (control); (b) strong negotiators knew weak negotiators' BATNAs, but weak negotiators knew only their own BATNAs (Condition 2); (c) weak negotiators knew strong negotiators' BATNAs, but strong negotiators knew only their own(Condition 3); and (d) both strong and weak negotiators knew each other's BATNA(Condition 4).

Dependent Measures

- **Pre-Negotiation Perceptions**

  Strong and weak negotiators' perceptions of others' BATNAs were assessed *prior* to negotiations. Their perceptions were surveyed *after* reading materials about their role, payoff schedules and BATNA manipulation but before receiving information about another's BATNA (if applicable).

- **Bargaining Strength**

  Negotiators' bargaining strength was measured by the percentage of bargaining surplus they received. The distribution of resources within negotiation

pairs is examined to determine whether informed strong (weak) negotiators are able to claim a larger (smaller) share of the resources than those without knowledge.

- **Negotiation efficiency**

  The measure of negotiation efficiency for each negotiation dyad is joint outcome. Higher joint outcome indicates more efficient agreements.

Note that the first two measurements would be analysed at individual level whereas negotiation efficiency would be analysed at dyadic level.

Manipulation Checks

Subjects were asked to specify the number of points they would receive in case of an impasse. Less than 2% of participants gave the wrong answers in the first trial. All of them were correct on their second attempt. All negotiators who were given knowledge of BATNA-asymmetries correctly reported their opponents' BATNAs.

As mentioned, subjects were allowed to freely communicate with opponents during the negotiation. It is important to consider if negotiators revealed their own BATNAs. Weak negotiators were not expected to disclose their BATNAs often, particularly when they knew that they were in the weaker position. However, strong negotiators in Condition 2 knew that their BATNAs were better than their counterparts' and may have had an incentive to reveal their BATNA advantage to weak negotiators. As a result, this could contaminate (or at least weaken) the manipulation of knowledge of BATNA-asymmetries.

To check this potential design limitation, subjects were asked whether they had revealed their BATNAs to their opponents during the negotiation. Only four (of 224) negotiators reported that they had. Two of the four were strong negotiators in Condition 3. Weak negotiators in Condition 3 were given information about the other party's BATNAs. So, strong negotiators' revelation of their own BATNAs merely confirmed the information given to weak negotiators. There is evidence to suggest that the manipulation of knowledge of BATNA-asymmetries was robust as intended.

RESULTS

Negotiators' Perceptions about Others' BATNAs

An independent *t*-test was performed to examine whether strong and weak negotiators tend to anchor their perceptions of the other's BATNA to their own BATNAs, prior to negotiation. Since negotiators' perceptions were measured before

receiving information of opponents' BATNAs (if relevant), the independent variable would be negotiators' own BATNAs. As Hypothesis One predicted, strong negotiators' estimate of opponents' BATNAs (M = 5,690) was significantly higher than that of weak negotiators (M = 1,375) (t = 17.78, $p < 0.0005$). Thus, the result supports Hypothesis One.

Knowledge of BATNA-Asymmetries and Bargaining Strength

Unless otherwise stated, a univariate analysis of variance (ANOVA) was used to test the relationship between the manipulated levels of knowledge of BATNA-asymmetries and the dependent measures. Significant main effects of strong knowledge and weak knowledge were found for strong negotiators' bargaining strength ($F(3,108) = 7.437$, $p < 0.0005$), and for weak negotiators' bargaining strength respectively ($F(3,108) = 7.438$, $p < 0.0005$) (see Table 1 for means and Table 2 for related statistics). I compared bargaining strength when only strong negotiators were informed of both BATNAs, to that when neither party was informed (control group vs. Condition 2). According to Hypothesis Two, strong negotiators' knowledge of BATNA-asymmetries should increase with bargaining strength. As can be seen in Table 1, when only strong negotiators were informed of both BATNAs, they obtained a larger share of the resource pie (M = 54.0%) than when they were not (M = 47.5%) ($F(3,108) = 7.438$, $p < 0.0005$). This indicates that information of another's BATNA available to strong negotiators had a significant, positive impact on their bargaining strength. The finding also supports Hypothesis Three that when only weak negotiators were informed of both BATNAs, they would receive a smaller share of the resource pie (M = 48.4%) than when weak negotiators were not (M = 52.5%) ($F(3,108) = 7.438$, $p < 0.0005$). Information of another's BATNA, in contrast, reduces weak negotiators' bargaining strength.

Knowledge of BATNA-Asymmetries and Agreement Efficiency

As discussed, three hypotheses on the knowledge of BATNA-asymmetries and agreement efficiency were examined. The ANOVA main effects of strong negotiator's knowledge for joint outcomes was significant ($F(1,108) = 25.53$, $p < 0.0005$). In addition, the main effect of weak negotiators' knowledge was not significant, but instead a significant interaction (strong negotiators' knowledge x weak negotiators' knowledge) was found on joint outcomes ($F(1,108) = 5.06$, $p < 0.05$). This interaction suggests that the impact of weak negotiators' knowledge on joint outcomes depended on the knowledge held by strong negotiators (see Table 4 for related statistics). A series of planned comparisons was conducted to clarify the three

hypotheses regarding the relationship between negotiators' knowledge of opponents' BATNAs and joint outcomes.

Pinkley's Explanation (Strong Negotiators' Knowledge)

Hypothesis Four predicted that knowledge of BATNA-asymmetries by strong negotiators should increase with joint outcomes. Contrary to the prediction of this hypothesis, *a priori* contrast (control vs. Condition 2) revealed that strong negotiators' knowledge of BATNA-asymmetries *damaged* agreement efficiency. As can be seen in Table 3, when only strong negotiators were informed of both BATNAs, joint gains were significantly *lower* than when neither party was informed (M = 16,086$_b$ compared to M = 16,929$_a$) ($F(1,108) = 3.93$, $p < 0.05$). These findings suggest that strong negotiators' knowledge hindered a dyad's ability to search for efficient solutions.

Table 1 Mean Percents of Surplus (Standard Deviations) Claimed by Negotiators by Experimental Conditions

	Experimental Condition			
	Neither Informed (Control)	Only Strong Negotiators Informed (Condition 2)	Only Weak Negotiators Informed (Condition 3)	Both Informed (Condition 4)
Strong Negotiators' Bargaining Strength	47.53$_a$	53.86$_b$	51.61$_b$	54.76$_b$
	(5.45)	(4.40)	(6.17)	(8.33)
Weak Negotiators' Bargaining Strength	52.47$_a$	46.14$_b$	48.38$_b$	45.24$_b$
	(5.45)	(4.40)	(6.17)	(8.33)

Note: n = 28 in each condition. Subscripting is based upon comparisons of means within each row using ANOVAs with contrasts; different subscripts indicate means differ at p < .05 or less (e.g. Control strong negotiators' bargaining strength is given the subscript 'a' and is significantly different to that for Condition 2 given subscript 'b'.).

Table 2 Effects of Strong Negotiators' Knowledge and Weak Negotiators' Knowledge on Strong and Weak Negotiators' Bargaining Strength

Source	*SS*	*df*	*MS*	*F*	*p*
Strong Negotiators' Knowledge	628.54 (628.59)	1 (1)	628.54 (628.59)	16.10 (16.06)	<.0005 (<.0005)
Weak Negotiators' Knowledge	173.69 (173.71)	1 (1)	173.69 (173.71)	4.44 (4.44)	.037 .037
Interaction	71.01 (70.99)	1 (1)	71.01 (70.99)	1.81 (1.81)	.181 (.181)
Explained	873.24 (873.29)	3 (3)	291.08 (291.10)	7.44 (7.44)	<.0005 (<.0005)
Residual	4226.82 (4226.82)	108 (108)	39.14 (39.14)		
Total	5100.06 (5100.11)	112 (112)			

Note: Related statistics for Weak Negotiators' Bargaining are indicated in parentheses. Since the percents of the resource pie received by strong negotiators and their counterparts always add up to 100%, the results of significance tests are in the same pattern.

Table 3 Means (Standard Deviations) for Joint Gains by Experimental Conditions

	Experimental Condition			
	Neither Informed (Control)	Only Strong Negotiators Informed (Condition 2)	Only Weak Negotiators Informed (Condition 3)	Both Informed (Condition 4)
Joint Gain	$16{,}929_a$	$16{,}086_b$	$17{,}964_c$	$15{,}789_b$
	(1,401)	(2,023)	(998)	(1,779)

Note: n = 28 in each condition. Maximum joint gain = 18,800. Subscripting is based upon comparisons of means within each row using ANOVAs with contrasts; different subscripts indicate means differ at $p < .05$ or less (e.g. the joint outcome for Control is given the subscript 'a' and is significantly different to that for Condition 2 given subscript 'b'. However, joint outcomes for Condition 2 and 4 are not significantly different.).

Table 4 Effects of Strong Negotiators' Knowledge and Weak Negotiators' Knowledge on Joint Outcomes

Source		*SS*	*df*	*MS*	*F*	*p*
Strong Knowledge	Negotiators'	64,660,804	1	64,660,804	25.53	<.0005
Weak Knowledge	Negotiators'	4,050,804	1	4,050,804	1.60	.209
Interaction		12,825,089	1	12,825,089	5.06	.026
Explained		81,536,696	3	27,178,899	10.73	<.0005
Residual		273,500,000	108	2,532,708		
Total		355,100,000	112			

Roloff and Dailey's explanation (Weak Negotiators' Knowledge)

Hypothesis Five suggested that solo weak negotiators' knowledge of BATNA-asymmetries improves dyads' ability to find efficient outcomes. The planned contrast of the measure of agreement efficiency between the control group and Condition 3 provided evidence to support Hypothesis Five. Joint outcomes were significantly higher when only weak negotiators were informed (Condition 3) than when no party was informed (control) (M = 17,964$_c$ vs. M = 16,929$_a$) (F(1,108) = 6.18, p = 0.014).

Alternative Hypothesis (Complete Knowledge)

Hypothesis Six predicted that when both players were aware of BATNA-imbalances, agreement efficiency would be greater than when they were not. However, the findings contradict this hypothesis. The planned contrast (control vs. Condition 4) of joint outcomes revealed that when both negotiators were informed of opponents' BATNAs, joint gains were significantly *lower* than when they lacked information (M = 15,789$_b$ compared to M = 16,929$_a$) (F(1,108) = 7.18, p = 0.009). Complete knowledge of BATNA-asymmetries hindered dyads from reaching efficient solutions. By examining the results of Hypotheses Five and Six, the positive impact of weak negotiators' knowledge on joint outcomes disappeared when strong negotiators were also given the information of BATNA-asymmetries. This explains why an interaction (strong negotiators' knowledge x weak negotiator's knowledge) was observed and the main effect of weak negotiator's knowledge was insignificant.

DISCUSSION

The current research shows that knowledge of others' BATNAs plays an important role in BATNA-asymmetric negotiations. I examined the impact of strong and weak negotiators' BATNAs on their perceptions about others' BATNAs, prior to negotiations. The findings show that the quality of negotiators' BATNAs influenced how their expectations about others' BATNAs were formed. Most strong negotiators (94%) and weak negotiators (90%) reported that they believed their opponents also had a BATNA. Moreover, their estimates were similar to their own BATNAs (e.g. $M_{\text{weak negotiatiors' estimate of others' BATNA}}$ = 1,375 vs. weak negotiators' BATNA = 1,200 and $M_{\text{strong negotiatiors' estimate of others' BATNA}}$ = 5,690 vs. strong negotiators' BATNA = 6,000). Thompson and Anderson (2004) seem to have a similar view: they found that negotiators possessing a BATNA did not significantly perceive themselves as more powerful than those without one.

Moreover, something about knowledge of BATNA-asymmetries affected both distributive and integrative outcomes. The results pertaining to bargaining strength show that when negotiators knew only their own BATNAs, strong negotiators were not able to reflect their BATNA advantage in the distribution of outcomes: They received only about 47% of the resource pie on average. Being given the information of BATNA-asymmetries placed strong negotiators in a position of greater bargaining strength, resulting in a bigger slice of the resource pie than control strong negotiators who lacked this information.

Perhaps knowledge of BATNA-asymmetries provided strong negotiators with a *justification* of a larger share of the resource pie. It signals to them that their counterparts rely on the existing negotiation to a greater extent than they do. The positive relationship between knowledge of BATNA-asymmetries and strong negotiators' bargaining strength has important implications. It explains why in some studies strong negotiators were able to reflect their BATNA advantage (Kim & Fragale, 2005; Komorita & Leung, 1985; Magee et al., 2007; Pinkley et al., 1994) but in another study, they failed to do so (Pinkley, 1995). Magee et al. (2007) examine the relationship between BATNAs and the likelihood and pattern of negotiators making the first offer. They show that strong negotiators, compared to weak negotiators, are more likely to make an advantageous first offer, but this finding is confined to situations where strong negotiators knew both BATNAs. It is possible that the observed effect of BATNA on the first offer made is also mediated by knowledge of BATNA-asymmetries. More research is necessary to address this issue.

However, it was found that when only weak negotiators were informed, they tended to claim a smaller portion of surplus than when they were not. Since bargaining strength was measured by the portion of the resource pie claimed by negotiators, a decrease in the portion received by weak negotiators in one experimental condition represents an increase in strong negotiators' bargaining strength. In other words, when only weak negotiators were informed, strong negotiators do better than when no information was given. The percentages of the total surplus claimed by strong and weak negotiators as seen in Table 1 suggest that anyone having information about others' BATNAs is beneficial (detrimental) to strong (weak) negotiators' bargaining strength.

Many theorists have pointed out that dyads with unequal BATNAs tend to reach more efficient outcomes than those with equal BATNAs. We know little about how this increased efficiency is achieved (Pinkley et al., 1994; Roloff & Dailey, 1987). Although researchers have suggested processes by which this occurs, their suggestions are so diverse that we are left wondering whether BATNA-asymmetries do in fact matter (Brett et al., 1996; Lawler & Yoon, 1993; Pinkley, 1995; Roloff & Dailey, 1987).

The current study sheds light on this domain in two ways. Firstly, negotiators' knowledge of BATNA-asymmetries has a profound impact on agreement efficiency, indexed by joint outcomes. Secondly, the effects of negotiators' knowledge can be very different, depending on which member(s) of the dyad has access to this information. These results refine and generalise the theoretical relationship between knowledge of BATNA-asymmetries and efficiency of negotiated agreements.

It was found that when only strong negotiators were informed of both BATNAs, dyads were less likely to reach efficient agreements than when they were not. These findings do not support the refined version of Pinkley's (1995) hypothesis regarding BATNA-asymmetries and agreement efficiency. In fact, strong negotiators' knowledge of BATNA-imbalances hindered this process.

Research that considers power-asymmetric situations may show us insights into why strong negotiators' knowledge reduces efficiency. Lawler and Yoon (1992) and Mannix (1993) speculate that in power-imbalanced negotiations, power-advantaged negotiators tend to push for agreements which reflect the difference between parties. The authors did not provide supportive empirical evidence for this contention, or speculate under what circumstances this would occur.

Coupling this contention with the current findings, it may be that knowledge of BATNA-asymmetries changes strong negotiators' mind-set and the way they

approach negotiations. Knowledge of BATNA-asymmetries signals to strong negotiators that their weaker opponents rely more on the existing negotiation. This knowledge may induce more value-claiming behaviours and competitive tactics from strong negotiators, which allow them to reflect their BATNA advantage. In doing so, it is likely that informed strong negotiators will fail to consider the possibility that the resource pie can be expanded. Some supportive evidence for this speculation was found in this research: strong negotiators' knowledge increases their bargaining strength. Nevertheless, more work is required to confirm this conjecture and other mechanisms might be responsible for the adverse effect of this knowledge on efficiency.

Conversely, weak negotiators' knowledge of BATNA-imbalances alone was shown to be beneficial to the development of efficient outcomes. Weak negotiators' awareness of BATNA-asymmetries alone can positively affect dyads' abilities to reach efficient outcomes. The pattern of results generally supports that weak negotiators' knowledge of BATNA-asymmetries is the key to the development of efficient agreements in BATNA-imbalanced negotiations. Specifically, in this study, non-common knowledge of whether strong negotiators knew both BATNAs was shown to be important and when this confounding variable was removed, weak negotiators' knowledge alone was found to improve the development of efficient agreements.

It is possible that information about another's BATNA may make weak negotiators realise that they are more reliant on the existing negotiation than their counterparts. As a result, informed weak negotiators may be motivated to be creative and to search for integrative agreements that generate sufficient surplus, in order to keep their stronger counterparts at the negotiation table. At the same time, negotiated agreements must provide sufficient benefit for weak negotiators.

The current study also explored the possibility that commonly held knowledge of BATNA-imbalances may be necessary to increase agreement efficiency. When both parties had complete knowledge about BATNA-asymmetries, they tended to reach less efficient agreements than when they had no knowledge.

Of all the results, this finding about complete knowledge is the most intriguing. While weak negotiators' knowledge alone improved the quality of agreements, dyads' ability to reach efficient agreements was hindered in the presence of strong negotiators' knowledge. The pattern of results suggests that the detrimental impact of strong negotiators' knowledge of BATNA-asymmetries on agreement efficiency is powerful enough to 'wash out' the benefit of weak negotiators' knowledge of

BATNA-asymmetries. The findings have also made another theoretical contribution by identifying the situation where agreements are most efficient in BATNA-asymmetric negotiations—when *only* weak negotiators were aware of both BATNAs.

Together, information about an opponent's BATNA introduces a trade-off between distributive and integrative outcomes for both strong and weak negotiators but in the opposing direction. For example, knowledge of BATNA-asymmetries, when available only to weak negotiators, can make dyads more effective at making integrative trade-offs, but at the same time they adversely influences weak negotiators' bargaining strength, resulting in receiving a smaller portion of resource pie. All of these findings substantiate Brodt's (1994) claim that whether information about opponents is a source of strength or weakness relies on the structure of tasks and how negotiators use it. In BATNA-asymmetric negotiations, it may be premature to conclude that knowledge of opponents' BATNAs is advantageous to negotiators, as the findings show that it depends on the extent to which there is an integrative potential.

Study Limitations and Future Directions

The limitation of the current research is that it leaves open the question of how knowledge of BATNA-asymmetries affects agreement efficiency. Specifically, we do not yet know *how* strong negotiators' knowledge hinders and weak negotiators' knowledge facilitates the development of efficient agreements. More research is necessary to identify how the benefit of weak negotiators' knowledge disappears once strong negotiators' knowledge is introduced.

Despite this limitation, this paper suggests that knowledge of BATNA-asymmetries is an important focus for future research while providing a fuller understanding of the relationship between this knowledge and agreement efficiency, and moves the field forward by opening several avenues to explore.

Practical Implications

An important practical implication can be drawn from the findings. From the perspective of strong negotiators, although research about opponents' BATNAs improves their bargaining strength, it also poses potential costs that may injure integrative potential. In this case, informed strong negotiators should bear in mind they should still look for ways to expand the resource pie and therefore create more values on the table for both parties without hurting themselves.

This study also extends research on BATNA-asymmetries by showing that the detrimental effect of strong negotiators' knowledge on efficiency may be more

damaging in other negotiation scenarios. For instance, when there are future ramifications for the parties (e.g. unions and their management), informed strong negotiators' "taking a larger slice out of a resource pie" (i.e. diminishing opponents' resources) can easily create a negative atmosphere and destroy trust in future relationships. Given the importance of trust to communication of interests and priorities (Anderson & Thompson, 2004; Carnevale & Isen, 1986), it renders the discovery of efficient agreements even harder in future negotiations and the accumulative loss of surplus that strong negotiators suffer may be considerable.

Conclusion

Knowledge of BATNA-asymmetries—depending on which party has access to it, and how negotiators use it—may be the heart of a successful negotiation. Counter-intuitively, weakness leads to efficiency and strength can lead to "winning" an impoverished prize. This research thus suggests a re-evaluation of how we think about "weak" and "strong" negotiators. Given that "weakness" leads to the stimulation of creativity and resourcefulness, and "strength" to narrowing of positive outcomes, it seems that informed underdogs have a strength all of their own.

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APPENDIX ONE

General Information of Job Negotiation Task

The purpose of this study is to examine negotiation behaviour. There will be a negotiation between an employer and employee about a job contract for the post of Assistant Manager. You will be randomly assigned as either an employer or employee. There are six issues of concern in the negotiation: salary, annual leave, bonus, starting date, medical coverage and company car. You will negotiate for points. Before you negotiate, you will be given a chart that describes all the possible ways you can settle this negotiation and how many points you can get for each alternative settlement. Your goal in this negotiation is to maximise the number of points you gain for yourself. You will be given thirty minutes to negotiate and if you are unable to reach an agreement during that time, a disagreement will be declared.

APPENDIX TWO

Pay-off Schedules for Job Negotiation Task

Salary	Annual Leave	Bonus	Starting Date	Medical Coverage	Company Car
Employer Pay-off Schedule					
£24,000	25 days	10%	1st July	Plan A	BMW 330i
(0)	(0)	(0)	(1200)	(3200)	(0)
£23,000	20 days	8%	15th July	Plan B	VW Golf
(500)	(1000)	(400)	(900)	(2400)	(200)
£22,000	15 days	6%	1st Aug	Plan C	Honda
(1000)	(2000)	(800)	(600)	(1600)	(400)
£21,000	10 days	4%	15th Aug	Plan D	Ford Focus
(1500)	(3000)	(1200)	(300)	(800)	(600)
£20,000	5 days	2%	1st Sept	Plan E	No Company Car
(2000)	(4000)	(1600)	(0)	(0)	(800)
Employee Pay-off Schedule					
£24,000	25 days	10%	1st July	Plan A	BMW 330i
(2000)	(1600)	(4000)	(1200)	(0)	(3200)
£23,000	20 days	8%	15th July	Plan B	VW Golf
(1500)	(1200)	(3000)	(900)	(200)	(2400)
£22,000	15 days	6	1st Aug	Plan C	Honda
(1000)	(800)	(2000)	(600)	(400)	(1600)
£21,000	10 days	4%	15th Aug	Plan D	Ford Focus
(500)	(400)	(1000)	(300)	(600)	(800)
£20,000	5 days	2%	1st Sept	Plan E	No Company Car
(0)	(0)	(0)	(0)	(800)	(0)

Note. Negotiators were instructed that the number of points they get is in parentheses.