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WORKING PAPER

Research Methods in Negotiation: 1965-2004

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Abstract

This study provides insight into the dominant methodological practices that have shaped the field of negotiation over the past four decades, and sheds light on possible gaps and trade-offs. We content analyzed 941 peer reviewed negotiation articles (published between 1965-2004) for methodology. We distinguished key issues in negotiation research and identified methodological trends over time (1965-2004). The results reveal significant changes in reliability, validity and triangulation issues. In addition, the rise of multivariate statistics and multiple data-sources displays a positive evolution towards more sophisticated methodologies. However, more attention is needed to address the enduring lack of longitudinal designs and qualitative techniques in negotiation research.

KEYWORDS: negotiation; research methodology; review; validity; triangulation

Introduction

Negotiation research is marked by several research traditions in the applied behavioral sciences, such as psychology, political science, law, economics, communication, anthropology and organizational behavior (Carnevale and De Dreu 2005; De Dreu and Carnevale 2005). Over the past four decades, the study of negotiation has been one of the most rapidly growing areas in the field of organizational psychology. For example, the PsycINFO database for our search of peer reviewed articles with negot* in the title yielded 93 hits for the year 2000. Only one hit was noted for 1965 indicating an exponential growth and expanding interest in the topic over the last decade.

As a research field continues to progress and mature, it is important for researchers to assess the methods that are employed because such assessment provides insight into the rigor with which data are collected and analyzed (Pfeffer 1993). Furthermore, researchers should gain insight into the extent to which the used methodological procedures allow to make valid inferences. To put it differently, choices made about research methodology are inextricably related to validity issues. Therefore, for an evolving field as negotiation, an analysis of articles with respect to the validity of research findings is of major significance to gain further recognition in the academic community (Chandler and Lyon 2001; Scandura and Williams 2000).

In previous attempts by negotiation scholars, general overviews have been presented, exploring main trends, traditions and paradigms that have shaped the field as we know it today. These papers have adopted a thematic rather than a methodological approach, reflecting on potentially fruitful avenues for future research (e.g., Bazerman et al. 1991; Bazerman et al. 2000; Carnevale and Pruitt 1992; Lewicki et al. 1986; Thompson 1990; Wall and Blum 1991). In short, these reviews have discussed the 'what question' of negotiation, have tried to delineate the content domain of the concept. A next step in the further development and evolution of the field involves how negotiation should be examined.

While outlining their own methodological choices, several authors have expressed their concerns about the relative merits and limitations of various quantitative and qualitative research methods, and have discussed their possible application in negotiation research (e.g., De Dreu and Carnevale 2005; Duffy and Kavanagh 1983;

Greenhalgh and Gilkey 1997; Harris 1996; Hopmann 2002). Some scholars focus on strong manipulation, at the expense of external validity, others favor realism over internal validity (Chatman and Flynn 2005; Wilkenfeld 2005). Quantitative analyses of negotiation especially are fruitful when the negotiation process is highly transparent and mechanistic (Hopmann 2002). Some scholars argue that qualitative research has a penchant for construct error, poor validation, and questionable generalizability (Fielding and Schreier 2001). Others have moved from an emphasis on quantitative methods to the application of more qualitative techniques, such as comparative case studies (Hopmann 2002; Zartman 2005). Qualitative techniques are found suitable for making subtle, nuanced analyses as it considers behavior in the total negotiation context (Friedman 2005; Hopmann 2002; Pruitt 2005).

As a research domain expands, there is a growing need for a comprehensive assessment of the methods and techniques employed (Scandura and Williams 2000). To our knowledge De Dreu and Carnevale (2005) were the first ones who did a review study on research methodology in negotiation research. In that inquiry they reviewed 345 articles on the methods and techniques used over a five year-period. Because this methodological exercise has been ensued on a limited scale and a short time period, we underline the need for a more in-depth analysis of the main methodological shifts and patterns in negotiation research over the past decades. Insufficient awareness of possible methodological blind spots and trade-offs, might constrain further development. Research design choices and strategies used in the past may be as much inspired by the objective needs of the field, by the requirements and preferences of the top journals, by cultural traditions, or sometimes even by pure fad (Eccles and Nohria 1992; Sackett and Larson 1990).

Based upon the discussion above, the purposes of this paper are threefold: (1) to give a brief overview of the current pitfalls in the application of research methods; (2) to identify the main methodological shifts and patterns that have occurred in negotiation research over the past four decades; and (3) to provide insights, future directions and recommendations for the field.

The remainder of the article is divided in four parts. First, common issues in the use of research methods are described. Next, our selection method of articles and procedure for analyzing the papers are explained. Third, the results of the coding of

941 articles on negotiation over the past four decades are reported. In the final section, we conclude with a discussion of the most salient findings and suggestions for future research on negotiation.

Literature Review

Validity

Negotiation research embedded in the psychological tradition has been dominated by the postpositivist paradigm (De Dreu and Carnevale 2005). As such the scientific method and the issue of validity are a central focus in negotiation research. Validity refers to the degree to which one can draw appropriate inferences from empirical research findings and is an important concept reflecting the rigor of the research methodology used (Cortina 2002). A frequently cited validity model is the Campbell-Cook model. This model encloses internal, external, construct and statistical conclusion validity, thus requiring attention to designs of research, to causes and effects, to operationalization and measurement of variables, and to the generalization of findings (Cook and Campbell 1976; Austin et al. 2002).

In fields related to negotiation like organizational behavior, entrepreneurship, marketing and general management, several methodology reviews have revealed an increased attention for validity issues. Despite this evolution, an in-depth examination of validity issues shows a negative evolution with regard to internal, external and construct validity of research. With respect to statistical conclusion validity, however, a more positive development is noted (Aulakh and Kotabe 1993; Austin et al. 2002; Chandler and Lyon 2001; Frankel et al. 2005; Grégoire et al. 2002; Malhotra et al. 1996; Nakata and Huang 2005; Scandura and Williams 2000; Schriesheim et al. 1993; Sekaran 1983; Stone-Romero et al. 1995).

Research Design

De Dreu and Carnevale (2005) argue that negotiation scholars tend to focus on a handful of dominant research techniques. They found that half of the negotiation studies

published between 1997 and 2001 applied laboratory experiments; about one-third included some form of mathematical modeling, surveys and questionnaires. Although experimental designs are excellent designs to ensure the precision of measurement and to detect causal effects, they are limited in their ability to generalize across different settings, time periods and populations because of their lack of context realism. Another flaw experimental designs share with other quantitative designs (e.g. survey studies, mathematical modeling, etc.) is that they are often predicated upon a strongly simplified representation of reality.

In general, in quantitative approaches the investigator uses postpositivist claims for developing knowledge (i.e. cause and effect thinking, reduction of specific variables and hypotheses, test of theories etc.), emphasizes objective reality and assumes that the discovery of truth can be understood by the mirror of science. Alternatively, qualitative research is more concerned with recovering and understanding situated meanings and systematic divergences in meanings. The perspective of qualitative approaches is often interpretative research. The goal of this type of research is not hypothesis falsification but to understand the actual production of meanings and concepts used by social actors in real settings. In consequence a relative stance is adopted such that diverse meanings are assumed to exist and to affect how people understand and respond to the objective world. In short, this type of research describes how different meanings held by different persons or groups produce and sustain a sense of truth. In comparison to quantitative research, qualitative research often performs better with regard to context realism (Gephart 2004; Creswell 2003). A frequent lament in the study of organizations is the apparent lack of rigorous and visible qualitative research (Aldag and Stearns 1988; Ehigie and Ehigie 2005).

Despite the difficult choices researchers face in applying either a quantitative or a qualitative design, Fielding and Schreier (2001) contend that the dichotomy between both approaches has often been overdrawn. Moore and Murnighan (1999) emphasize the need to bridge disparate perspectives in future negotiation research, in order to benefit theory development and improve data collection. Quantitative and qualitative methodologies are mutually reinforcing and complementary, and should be used in tandem (Baker 2001; Frankel et al. 2005). In the same vein, Hopmann (2002) and Spector (2001) argue that mixed method approaches can help researchers understand

issues better than either of the two separately. Combining diverse methods for the same research question affords different views of the phenomenon under investigation and increases confidence in the findings (Cook and Campbell 1976; Fielding and Schreier 2001; Sackett and Larson 1990).

Measurement

A key issue in the postpositivist approach to research is objective non-biased measurement. One of the recurring difficulties in management studies, is the lack of research based on multisource data. According to Spector (2001) multisource designs enhance the objectivity of the findings. Chandler and Lyon (2001) argue that research that does not use multiple data sources, has a higher probability to be contaminated by common method variance. Common method variance occurs when data, representing the dependent variables and independent variables, come from the same respondent (Podsakoff et al. 2003; Spector 2001). Because common method variance jeopardizes construct and internal validity of a study, researchers should be aware of this possible threat when developing and conducting their research.

Another important issue in measurement is reliability. Although reliability is a necessary condition for validity, much of the research done in entrepreneurship, marketing and organizational sciences remains relatively unsophisticated in its treatment of reliability issues (Aulakh and Kotabe 1993; Chandler and Lyon 2001; Podsakoff and Dalton 1987; Schriesheim et al. 1993). However, evidence indicated more studies are paying attention to reliability (Aulakh and Kotabe 1993; Chandler and Lyon 2001). The increase in reporting reliability checks may be due to an increased rigor demanded by academic journals (Aulakh and Kotabe 1993).

Analysis of quantitative data

Also a key aspect of research methodology and inextricably linked to the concepts (i.e. research methodology, validity, and measurement) discussed above, involves the analysis of data. Especially the way how quantitative data are analyzed has important repercussions for the statistical conclusion validity. Prior to the mid 1960s, the major

part of statistical analysis in research involved the examination of bivariate correlations. There are a handful of statistical methods that have enjoyed long and widespread use in the field. Correlation, multiple regression, analysis of variance, and factor analysis have been particularly popular methods. Beginning the late 1960s, computer development encouraged the use of more powerful methods, such as discriminant analysis, multivariate analysis of variance, and structural equation modeling (Austin et al. 2002; Spector 2001).

Method

Literature search

Content analysis was used to analyze the data in this inquiry, an approach considered appropriate for review studies (e.g., Aulakh and Kotabe 1993; Austin et al. 2002; Bartunek et al. 1993; Busenitz et al. 2003; Chandler and Lyon 2001; Grégoire et al. 2002; Frankel et al. 2005; Nakata and Huang 2005; Podsakoff and Dalton 1987; Sackett and Larson 1990; Scandura and Williams 2000; Stone-Romero et al. 1995). To fully cover four decades of research on negotiation, we focused on the period 1965-2004. Contrary to our predecessors in other fields, who centered their search around articles published in a few selected journals, we opted for a wider variety of publications. Both empirical and conceptual studies were incorporated in order to represent the full range of research. Reviewing a broad spectrum of articles is vital for several reasons. First, limiting our analysis to a few top-tier journals might skew our findings towards methods that are predominant in those outlets. Landmark studies appearing in academic journals with a slightly lower impact score would then not be included, although they often represent essential contributions to the field. Second, the goal of this study is to provide insights in the trends and characteristics of research in various substantive areas within the field of negotiation, and to highlight differences in the procedures that have been embraced and abandoned over time. Therefore, having a sufficient amount of cases per sub-area is desirable.

Criteria for inclusion

We identified a total of 2163 articles in the PsycINFO database using *negot** or *bargain** as keywords in the title for the period 1965-2004. To preclude irrelevant articles, clinical-psychological and psycho-analytical journals were put aside. Our literature set comprised 68 journals (list journals see appendix). Articles that did not fully cover negotiation behavior, were also excluded from analysis. As such, articles on mediation, arbitration or alternative dispute resolution were only included if they explicitly investigated the impact on the core negotiation process. Articles on interaction, social exchange or decision making were excluded from the analysis as well. Comments, book reviews, editorials, short research notes, or columns were also omitted. Only 941 of the 2163 initially selected articles were research articles on negotiation behavior and relevant for our purposes. A high number of articles described several separate studies with separate samples. Consistent with Scandura and Williams (2000), and Chandler and Lyon (2001), each study from an article describing multiple studies was treated as a separate data-entry. Accordingly 1108 studies from 941 articles were selected from our PsycINFO list. The set was not intended to be complete and exhaustive, but representative of the field's leading research.

Considerable differences were found in the number of articles published in these journals during subsequent periods. We opted for a comparison of the methodological approaches employed in two time periods, in order to explore the dominant practices and possible gaps within negotiation research. In line with Grégoire et al. (2002), we chose to examine two unequal timeframes, from 1965 to 1994 versus 1995 to 2004, that roughly have the same number of articles. This dichotomization allows us to detail how the most recent stream of research differs from preceding traditions, and how recent research has evolved from the more exploratory works.

Coding of variables

We developed a coding scheme in alignment with previous methodological research (Chandler and Lyon 2001; Podsakoff and Dalton 1987; Scandura and Williams 2000). However, a number of items specifically tailored towards the idiosyncrasy of

negotiation research were added. Studies were analyzed along 15 coding dimensions, related to validity, research design, measurement, analysis of quantitative data, and content. To further refine our coding scheme and coding rules, we conducted a coding test on the basis of 100 articles (Harris, 2001).

The principal coder coded all studies. A second coder recoded approximately half of the studies ($n = 589$). By coding the same article twice, we were able to check the stability (Krippendorff 1980; Weber 1990). Measures of interrater agreement were obtained by calculating the per cent agreement for each variable coded. Ambiguities and disagreements in codings were resolved by discussing key terms and jointly reviewing the articles until consensus was reached. Agreement in this sample of 589 studies ranged from 79.9 to 99.9 per cent. The median agreement was good (i.e. 91.3%), since reliability measures above 85 per cent are considered quite high (Kassarjian, 1977). Differences in opinion on clear-cut aspects such as time frame, sample size or focal process almost never occurred. Overall, disagreements mostly appeared with respect to the number of dependent variables. For a complete overview of our coding scheme we refer to the appendix. Before we jump to the presentation of our results an important note we should make is that the coding scheme was developed in alignment with a postpositivist approach to research. To put it differently, some parts of the coding scheme were designed to analyze quantitative papers (e.g. statistical techniques).

Results

The evolution of the internal validity issue in negotiation behavior: Primary research strategy and time frame

Using crosstabulations we compared percentages for both periods (1965-1994 versus 1995-2004). Time-based regression analysis with year as dependent variable and categories of interest as independent dummy variables were used to determine if there was a linear trend in the proportion of studies employing each specific research strategy. Table 1 reflects the use of various research strategies during the two periods described. Of 1108 studies reviewed, 250 or 22.5% were purely theoretical or conceptual in nature;

858 studies or 77.4% were empirical works. Laboratory experiments were the most popular strategy in both the recent and the earlier period. Other empirical methods still represent a minority. The number of laboratory experiments was significantly lower in the recent period, while significantly more experimental simulations and meta-analyses were used between 1995 and 2004. The number of theoretical articles was also significantly larger in the recent period. For the total range of years included in this study we noticed a decreasing linear trend in the case of laboratory experiments.

Insert Table 1 about here

Although these findings indicate a significant drop in the proportion of laboratory experiments, this evolution has not led to a significant raise in the attention given to other specific empirical techniques. We observe that 10.9% of the recent studies have employed more realistic, real life experimental simulations instead of laboratory work, as compared to 7.4% in the earlier period, but there was no statistical evidence towards an increasing linear trend to use this technique. The use of various non-experimental empirical techniques has changed marginally. For instance, although the application of case-studies, interviews and observations has slightly increased, it did so by nonsignificant proportions. Finally, the findings indicate an increase in the amount of theoretical and conceptual works. The magnitude of this development became even more clear when we considered the total number of *articles* in our database (N=941) instead of the total number of separate *entries* (N=1108): it appeared that no less than 33.3% of recent peer-reviewed articles were theoretical, compared to 19.3% in the earlier period. This might indicate that the field is currently reconsidering its conceptual boundaries.

Looking at Table 1 it seems that some attempts towards more diversification of empirical research strategies have been made, but this development is still very much in its infancy. As the field of negotiation continues to grow, it will be vital to pay attention to whether these attempts are becoming more prominent during the coming years.

Schaubroeck and Kuehn (1992) found that the research topic determined to a large extent both the design and the setting. Table 2 indicates how different research strategies are represented in the study of different types of negotiations. The large

majority of non-experimental empirical studies were conducted in the context of international and peace negotiations, whereas studies in the context of salary and job negotiations mostly took an experimental approach. Non-experimental research strategies were also frequently found in labor negotiation studies. Studies on buyer-seller and salary negotiations were mostly empirical with an experimental research strategy.

Insert Table 2 about here

Table 3 details how different research methods are employed according to the behavioral process or focal theme under investigation. Most research areas are dominated by one procedure. The greater part of research on communication and bias in negotiation appeals to experimental methods. We also noticed a significant decline in the use of laboratory experiments when the earlier period is compared to the last decade. Comparisons between 1965 to 1994 and 1995 to 2004 revealed an increase of qualitative procedures and conceptual articles in nearly all content domains. Articles on mathematical models and the training of negotiator skills revert to theoretical works, while few formal theory/conceptual publications exist on gender and personality aspects. Sample surveys were especially carried out in negotiation research on ethics. Also an important observation is the limited use of triangulation of the research methods. Between 1965 and 1994 no triangulation is applied to the use of research strategies. The recent period shows that cross-cultural studies made equally use of experimental methods, qualitative measures, surveys and theoretical works.

Insert Table 3 about here

Apart from the experimental design character of a study, also determining the internal validity of findings is the time frame of a study. Longitudinal designs are one of the most powerful tools available for the study of many organizational phenomena that cannot be studied experimentally (Spector 2001). To put it differently, longitudinal designs facilitate a researcher's attempts to establish causal priorities between variables as well as the degree of mutual dependence of the relationships between two or more

variables (Podsakoff and Dalton 1987). Although slightly on the rise, the amount of longitudinal studies in negotiation research has traditionally been rather scant. On a total of 858 empirical studies coded, only 15 or 1,7% were longitudinal. Comparing both periods yielded no significant findings (1965-1994: 1.2% and 1995-2004: 2.3%).

To conclude, although the laboratory experiment is still the dominating method to examine negotiation, a significant decline in the use of this research strategy has been noted. Instead we noticed a slight increase in the adoption of experimental simulation as a research method. According to McGrath (1982), the laboratory experiment maximizes precision in measurement and internal validity but possible trade offs are low generalizability and low realism of context. In experimental simulations an attempt is made to retain some realism of context and external validity. This effort, however, is still marginal since the limited increase we observed in the use of non-experimental designs. With respect to the time frame of designs, the call for more longitudinal designs still remains.

The evolution of generalizability and external validity of negotiation research: Type of sample, level of analysis and number of studies reported in one study

Although the choice of research design has serious implications for the generalizability and external validity of research, several other aspects of methodology also fulfill an important role. In this inquiry we analyzed the type of sample, the unit of analysis, the number of studies in one article, and the issue of international distribution.

We observed interesting changes in the types of samples employed in negotiation research between the two periods (see Table 4). As was the case in the earlier period, negotiation research in the last decade mostly relied on student samples, but the composition of these samples changed drastically. Whereas the earlier period indicated higher percentages for samples drawn from psychology and other or unreported student populations, researchers during the last decade mostly attracted business or MBA students. Regression analysis revealed a significant decreasing linear trend in the use of other or non-specified students.

Insert Table 4 about here

Looking at Table 4, it seems like researchers in negotiation behavior have somewhat tried to adopt a middle-of-the-road approach in their concerns of external relevance versus practical considerations by using MBA and business students instead of psychology students. MBA students are generally older, and since many start to pursue their MBA degrees after having gained a significant amount of work experience, one might consider them as more valid participants than psychology undergraduates. This finding could perhaps be interpreted as an important evolution in external validity on the level of sample type.

When designing their studies, negotiation researchers choose from among several levels of analysis, each of which has the potential to yield rich understandings of negotiation-related phenomena. We observed a significant time-based linear trend indicating an increase in the amount of research on dyadic negotiations, and a decrease in the amount of studies on team or multi-party negotiations. In the first period the percentage of studies relying on a dyadic level of analysis was 69.8%, whereas 77.1% for the 1995-2004 time period. Wall and Blum (1991), in their review, already denounced the fact that most studies in negotiation concern the dyad. This approach however, does not reflect reality because negotiation units in the real world typically consist of groups. Moreover, these authors noted that many core variables studied in negotiation research have different effects on groups than on individuals, and influences emanating from a group will also have different outcomes than those coming from an individual. In a similar vein, Carnevale and Pruitt (1992) proposed that more research on team and multiparty negotiations should be conducted. Yet, despite their calls we noticed a shift towards even less group-level and more dyadic research. This is a trend that compromises external validity with respect to the unit of analysis.

Another topic closely related to generalizability and external validity in negotiation behavior, is the amount and the approach of replication and cross-validation articles reported in one article. Wall and Blum (1991) made a strong call for the replication and refinement of results, both through identical as well as through different settings and methods, as they felt that negotiation researchers were biased towards conducting single studies. To some extent, it seems their appeal has been put to practice during the past decade. We observed a statistically declining linear trend in the number

of articles reporting one study. In addition a significant upward linear trend was observed with regard to articles including two, or even three or more studies. In the last decade, 25.9% of the empirical articles contained several separate studies, as compared to only 10.6% in the earlier period. To put it differently, more effort has thus been exerted over the last decade in the further testing and refining of initial findings and the exploration of related hypotheses. However, this trend has not lead to more diversification of research methods. We calculated that, within one article describing several studies, follow-up analyses or replications of the results of a first study are conducted by means of the same research procedure in 91.1% of the cases. It is clear that triangulation in research methods is a recent phenomenon. Only one article that employed different research procedures was published before 1990.

The evolution of construct validity and measurement approach in negotiation research

As summarized in Table 5, a large and statistically significant increase occurred in the proportion of empirical studies that report a procedure for establishing the reliability of their findings, with Cronbach's alpha and various estimates of interrater-reliability being the most frequently cited. This increased use of reliability measures reflects a positive linear trend. For the subset of experimental studies, we observe a rise in the amount of studies that explicitly report checks for the manipulations of their independent variables. It seems that, during the past decade, more attention has indeed gone out to examining the adequacy of experimental manipulations.

Insert Table 5 about here

As for other topics related to construct validity, we included the primary type of dependent variable and the number of data-sources per study. For both the recent and the earlier period, studies that measured tangible negotiated outcomes and behavioral or decisional outcomes take up the highest percentages, although we note a statistical and non-significant decrease for respectively studies with tangible negotiated outcomes and

studies with behavioral outcomes as dependent variables. The proportion of studies that employ perceptual outcomes as the primary type of dependent variable significantly increased and has almost quadrupled. The number of studies using multiple data-sources is still low. However, time-based regressions revealed that there was a slight upward trend towards conducting such studies. To put it differently, more researchers on negotiation are becoming aware of the need for multiple data-sources as a way to overcome the threat of common method variance.

The evolution of statistical conclusion validity: Data-analytical approaches and number of dependent variables

Data-analytical techniques and number of dependent variables are reported in Table 6. For both periods, the majority of studies used analysis of variance. In addition, the findings indicate a trend towards the application of more multivariate statistics. We also observed a significant linear increase in the use of regression analysis. The use of non-parametric techniques decreased, whereas the application of meta-analysis and cluster analysis increased. The use of these techniques, however, still remains marginal in negotiation research. Most studies we analyzed used two or three dependent variables. There were no significant changes or trends in the number of dependent variables.

Insert Table 6 about here

Discussion

In the present paper, we have systematically assessed the state of research methodology during the past decade (1995-2004) with those employed in earlier research, dating back to 1965, in the field of negotiation. We have examined and categorized the method sections of 1108 relevant studies. The need for looking back, and looking ahead to the future, is born out of a genuine concern to obtain a clear picture of how the field is evolving as we engage in this relevant area.

The dominant research strategy: Experimental designs

In line with methodological reviews in related management domains (Austin et al. 2002; Chandler and Lyon 2001; Nakata and Huang 2005; Sackett and Larson 1990; Scandura and Williams 2000), the field of negotiation is still primarily focused on a handful of dominant methods. Experimental procedures were mostly applied, especially for research on certain negotiation topics, such as communication mode or negotiator bias. Although we observed a drop in the proportion of laboratory experiments (from 72.9 to 59.7%), this has not yet led to a growing attention for non-experimental empirical techniques. With the exception of cross-cultural negotiation research, one could say the use of qualitative methods is rather limited.

However, substantially more emphasis is being put on theoretical and conceptual articles. It is yet to be awaited if this theorizing will lead to new and innovative streams of research. Researchers in negotiation behavior continue to specialize towards a limited amount of methodological approaches. It appears that they are highly successful in this specialization, but one should be aware that such practice could have serious repercussions as well.

The issue of validity in negotiation research

As our analysis demonstrated, methodologies employed in negotiation research are becoming increasingly sophisticated. Important evolutions have been made on issues of internal, external, construct and statistical conclusion validity. However, a number of concerns should be formulated as well. Only a small number of researchers have broadened the more traditional approaches to negotiation research. The major threats for the future development of negotiation research are situated on the level of context validity, and the replication of findings through different methods, different settings, and different types of participants.

Internal validity. To fully grasp internal validity, we measured the time frame of each study. The amount of longitudinal studies in negotiation research remains rather limited. However, the need for longitudinal research will likely become apparent in the near

future. Despite the relatively small amount of longitudinal research that has been conducted to date, we believe that a number of relatively new and recently introduced research topics in negotiation allow for a longitudinal approach.

External validity. Different opinions exist on the benefits and problems of using real life versus student populations in negotiation research. The amount of real life participants in negotiation research remains rather limited, while student populations continue to take up the large majority of samples. We observed, however, that more researchers made an appeal to professional negotiators and MBA students, rather than psychology or other students. If the goal of research is to understand negotiator behavior, then experienced negotiators should be the proper participants for research. Since much of the research and theorizing in negotiation claims relevance for managerial processes, our finding that only 3% of studies use practicing managers as participants is not exactly good news. Conversely, the high amount of international collaborative research projects that have recently been undertaken is promising for the further development of negotiation research. We believe the growing efforts in international collaboration bodes well for the field of negotiation, due to the potential divergence of research traditions.

Construct validity and measurement. More effort is being exerted in establishing the reliability of measures and in checking the adequacy of experimental manipulations. Furthermore, negotiation researchers make increasingly more use of multiple data-sources. Substantially more emphasis is being put on controlling the construct validity. This is of course an outright positive shift, one that is in line with methodological suggestions made in previous review articles. The fact that, despite this increase, about 70% of experimental studies still refrain from reporting such checks is striking, and open for several interpretations. One could argue that many negotiation experiments have employed manipulations that are so straightforward and clearcut that there is no need for any further inquiries on whether this manipulation actually succeeded or not. Still, as contemporary research increasingly adopts independents that are ‘intangible’, this high non-report percentage may evoke some serious frowns. The lack of this information inhibits independent replications and extensions. Without such information,

independent evaluations of research ‘quality’ is not possible (Albaum and Peterson 1984). Therefore, we should encourage researchers to provide information on the operationalization of their research designs.

Statistical conclusion validity. Increasingly attention is being directed towards issues of statistical power. It appears that research conducted during the past ten years exhibited more sophistication in the way hypotheses are formulated, variables are conceived of, and data are analyzed.

Contemporary negotiation researchers tend to include more dependents in their designs. In common with other management disciplines, there is a trend towards the use of multivariate models and more sophisticated statistical techniques. The dominant statistical technique used is analysis of variance. This is an appropriate technique for analyzing data collected by means of experimental designs.

One can argue that, to a large extent, the above evolution has been made possible through the development of highly elaborate statistical software packages. However, stating that the developments we observe on the level of analytical sophistication – combined with the aforementioned higher emphasis on construct validity – are self-evident and to be expected as the natural development of a scientific field in motion, would be a harsh oversimplification. It is not just ‘normal’ to observe that recent research is conducted in a more rigorous way than was the case in earlier times: the seminal overview article by Scandura and Williams (2000) actually demonstrated that exactly the opposite was occurring in research in general management. Scandura and Williams expressed their concerns on what struck them as ‘an apparent lack of preoccupation with *any* type of validity’. For negotiation research though, developments on the level of statistical conclusion validity seem quite favorable.

Conclusion

As the paradigm develops, researchers are beginning to move away from the use of simple, descriptive statistics towards more sophisticated and complex research designs with correspondingly more opportunity for the development of interesting theory. Until

now, researchers in the field of negotiation behavior have followed the experimental psychology paradigm, thereby compromising the triangulation of designs and samples necessary to avoid the flaws inherent in making trade-offs in research (Ehigie and Ehigie 2005).

Also interesting is that there seems to be some crucial differences in application of research methods across the various substantive context areas within the field of negotiation. De Dreu and Carnevale reveal substantial differences in the use of methods and techniques from 1997-2001 in negotiation research across five disciplines. Negotiation studies in organizational behavior, social and personality psychology and the communication sciences tended to have a predisposition towards laboratory experiments and surveys. By contrast, mathematical modeling, the use of experimental games and archival data were especially popular in economics and political science. This brings us to our next remark. Because the field of negotiation is an interdisciplinary field with its own specializations and research strategies, may be we should welcome a diversity of methodologies rather than trying to pursue a complete theory following the paradigms of more developed sciences. Many different methods are appropriate for theory creation and testing, and therefore one could wonder whether the study of negotiation behavior is not too strongly dependent on one method. Parallel to researchers in various other organizational domains, De Dreu and Carnevale (2005) increasingly favor triangulation of research methods, suggesting the use of a broad range of methods and techniques to study negotiation behavior.

In line with previous remarks we made, a future challenge will be to overcome the differences in the assumptions of researchers who adhere to traditional quantitative methodologies as opposed to those who apply nontraditional qualitative methodologies (Podsakoff and Dalton 1987). In the past, a number of recommendations were made to encourage triangulation in management research. Researchers note that the creative use of unobtrusive measures, direct observation, time series analyses and multimethod approaches should be explored and applied, in order to encompass the whole spectrum of perspectives and methods. A prerequisite for significant progress is to encourage researchers to provide information on the operationalization of their research designs (Albaum and Peterson 1984). Furthermore, we believe researchers should begin by recognizing knowledge limitations. Through the organization of modules or workshops,

a forum -in line with Moore and Murnighan's expert debate- can be created, where research methods can be discussed and evaluated.

Already in the seventies, Chertkoff and Esser (1976), Hamner and Yukl (1977), and Rubin and Brown (1975) have argued that more field studies in negotiation research are needed. Certainly, the strikingly low amount of field studies being conducted, and the lack of evolution in this matter, is disconcerting. Wall and Blum (1991) equally urged researchers to adopt research strategies with higher external validity. The debate on conducting experimental versus so-called real life studies in negotiation is already a classic one, and often the subject of fierce discussion. While it is not our purpose to defend one of two camps, nor to repeat any call to arms, the fact that this widespread polemic has not provoked the least change is quite puzzling: field studies continue to represent a trivial minority of about two per cent. The answer on how to proceed from such a situation basically stems from two distinct streams in science philosophy: one stream suggests that a scientific field should first lay a sound conceptual foundation through studies in highly controlled settings before moving to more applied work, while another viewpoint posits that scientific research should create a perpetual spiral of knowledge through the continuous and mutual exchange of real life versus experimental findings (Benton and Craib 2001). According to the first viewpoint, 'research triangulation' or comparing findings across research methods might be considered premature; according to the second viewpoint, however, it is highly warranted and necessary.

To summarize, our opinion is that in scientific research, as well as in everyday life, the keyword is balance. Based on all classes of evidence we gathered in this study, it seems that speaking of 'balance' in the field of negotiation is an overstatement. Still, to use an analogy: in the fine arts, those who study painting or sculpturing are not merely evaluated on the quality on their work, but first and foremost on the evolution of their skills. When working hard, a moderate painter can obtain higher grades than an excellent one whose development has come to a standstill. Using this criterion, it appears that the field of negotiation research has already covered quite some distance, but there is still a long road ahead.

References

Albaum, G. and R. A. Peterson (1984). "Empirical Research in International Marketing: 1976-1982," *Journal of International Business Studies* 15(1), 161-173.

Aldag, R. J. and T. M. Stearns (1988). "Issues in Research Methodology," *Journal of Management* 14(2), 253-276.

Aulakh, P. S. and M. Kotabe (1993). "An Assessment of Theoretical and Methodological Development in International Marketing: 1980-1990," *Journal of International Marketing* 1(2), 5-28.

Austin, J., C. A. Scherbaum, and R. A. Mahlman (2002). "History of research methods in industrial and organizational psychology: Measurement, Design, Analysis," in S.G. Regelberg (Ed.), *Handbook of Research Methods in Industrial and Organizational Psychology*. Blackwell, Malden MA, pp. 3-33.

Baker, M. J. (2001). "Selecting a Research Methodology," *The Marketing Review* 1(3), 373-397.

Bartunek, J. M., P. Bobko and N. Venkatraman (1993). "Towards Innovation and Diversity in Management Research Methods," *Academy of Management Journal* 36(6), 1362-1373.

Bazerman, M., T. Magliozzi, and M. N. Neale (1985). "Integrative Bargaining in a Competitive Market," *Organizational Behavior and Human Decision Processes* 35(3), 294-314.

Bazerman, M., J. R. Curhan, D. A. Moore, and K. L. Valley (2000). "Negotiation," *Annual Review of Psychology* 51, 279-314.

Bazerman M., R. J. Lewicki, and B. H. Sheppard (1991). *Research on Negotiation in Organizations (Vol. 3)*. Greenwich, CT, JAI Press.

Benton, T. and I. Craib (2001). *Philosophy of Social Science*. Palgrave, MacMillan.

Breaugh, J. A. and R. J. Klimoski (1981). "Social Forces in Negotiation Simulations," *Personality and Social Psychology Bulletin* 7(2), 290-295.

Brodtt, S. (1997). "Innovative Approaches to Research on Group Decision and Negotiation," *Group Decision and Negotiation* 6(4), 283-287.

Busenitz, L.W., G.P. West, D. Shepherd, T. Nelson, G. N. Chandler, and A. Zacharakis (1993). "Entrepreneurship Research in Emergence: Past Trends and Future Directions," *Journal of Management* 29(3), 285-308.

Carnevale, P.J. and C. K. W. De Dreu (2005). "Laboratory Experiments on Negotiation and Social Conflict," *International Negotiation* 10, 51-65.

Carnevale, P. J. and D. Pruitt (1992). "Negotiation and Mediation," *Annual Review of Psychology* 43, 531-582.

Chandler, G. N. and D. W. Lyon (2001). "Issues of Research Design and Construct Measurement in Entrepreneurship Research : the Past Decade," *Entrepreneurship Theory and Practice* 25(4), 101-113.

Chatman, J.A. and F. J. Flynn (2005). "Full-Cycle Micro-Organizational Behavior Research," *Organization Science* 16(4), 434-447.

Chertkoff, J. M. and J. K. Esser (1976). "A Review of Experiments in Explicit Bargaining," *Journal of Experimental Social Psychology* 12(5), 464-486.

Cook, T.D. and D.T. Campbell (1976). "The Design and Conduct of Quasi-Experiments and True Experiments in Field Settings," in M.D. Dunnette (Ed.), *Handbook of Industrial and Organizational Psychology*. Chicago, Rand McNally, pp. 223-336

Cortina, J. (2002). "Big things have small beginnings: An assortment of minor methodological misunderstandings," *Journal of Management* 28, 339-362.

Creswell, J.W. (2003). *Research design: qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA, Sage.

De Dreu, C.K.W. and P. J. Carnevale (2005). "Disparate Methods and Common Findings in the Study of Negotiation," *International Negotiation* 10, 193-203.

Druckman, D. (1977). *Negotiations : Social Psychological Perspectives*. Beverly Hills, CA, Sage.

Druckman, D., and T. P. Hopmann (1991). "Content Analysis," in V.A. Kremenyuk (Ed.), *International Negotiation : Analysis, Approaches, Issues*. San Francisco: Jossey-Bass.

Duffy, J. F., and M. J. Kavanagh (1983). "Confounding the Creation of Social Forces: Laboratory Studies of Negotiation Behavior," *Journal of Conflict Resolution* 27(4), 635-647.

Eccles, R. G., and N. Nohria (1992). *Beyond the Hype: Rediscovering the Essence of Management*. Boston, Harvard Business School Press.

Ehigie, B.O. and R.I. Ehigie (2005). "Applying Qualitative Methods in Organizations: A Note for Industrial/ Organizational Psychologists," *The Qualitative Report* 10(3), 621-638. Retrieved on February, 14, 2006, from <http://www.nova.edu/ssss/QR/QR10-3/ehigie.pdf>.

Fielding, N. and M. Schreier (2001, February). "Introduction: On the Compatibility between Quantitative and Qualitative Research Methods," *Forum Qualitative Social Research On-line Journal* 2(1). Retrieved January 26, 2006, from <http://qualitative-research.net/fqs/fqs-eng.htm>.

Frankel, R., D. Naslund and Y. Bolumole (2005). "The 'White Space' of Logistics Research: A Look at the Role of Methods Usage," *Journal of Business Logistics* 26(2), 185-208.

Friedman, R.A. (2004). "Studying Negotiation in Context: an Ethnographic Approach," *International Negotiation* 9, 375-384.

Gephart, R.P (2004). "Qualitative research and the Academy of Management Journal," *Academy of Management Journal* 47, 454-462.

Graham, J. L. (1993). "The Japanese Negotiation Style: Characteristics of a Distinct Approach", *Negotiation Journal* 9(2), 123-141.

Greenhalgh, L., and R. W. Gilkey (1993). "The Effect of Relationship Orientation on Negotiators' Cognitions and Tactics," *Group Decision and Negotiation* 2(2), 167-186.

Greenhalgh, L., and S. A. Neslin (1981). "Conjoint Analysis of Negotiator Preferences," *Journal of Conflict Resolution* 25(2), 301-327.

Greenhalgh, L., and R.W. Gilkey (1997). "Clinical Assessment Methods in Negotiation Research: the Study of Narcism and Negotiator Effectiveness," *Group Decision and Negotiation* 6(4), 289-316.

Grégoire, D., D. G. Meyer and J. O. De Castro (2002). "The Crystallization of Entrepreneurship Research DVS and Methods in Mainstream Management Journals," Retrieved October 25, 2005, from http://www.babson.edu/entrep/fer/Babson2002/XXII/XXII/XXII_P1.htm.

Gruder, C. L. (1971). "Relationships with Opponent and Partner in Mixed-Motive Bargaining," *Journal of Conflict Resolution* 15(3), 403-415.

Hamner, W. C., and G. Yukl (1977). "The Effectiveness of Different Offer Strategies in Bargaining," in D. Druckman (Ed.), *Negotiations: Social-Psychological Perspectives*. Beverly Hills, Sage.

Harinck, F., and C. K. W. De Dreu (2000). "The Impact of Conflict Issues on Fixed-Pie Perceptions, Problem-Solving, and Integrative Outcomes in Negotiation," *Organizational Behavior and Human Decision Processes* 81(2), 329-358.

Harris, H. (2001). "Content Analysis of Secondary Data: A Study of Courage in Managerial Decision Making," *Journal of Business Ethics* 34(3-4), 191-208.

Harris, K. (1996). "Content Analysis in Negotiation Research : a Review and Guide," *Behavioral Research Methods, Instruments and Computers* 28(3), 458-467.

Hopmann, T.P. (2002). "Negotiating Data: Reflections on the Qualitative and Quantitative Analysis of Negotiation Processes," *International Negotiation* 7(1), 67-85.

Kassarjian, H.H. (1977). "Content Analysis in Consumer Research," *Journal of Consumer Research* 4(1), 8-18.

Klimoski, R. J. (1978). "Simulation Methodologies in Experimental Research on Negotiations by Representatives," *Journal of Conflict Resolution* 22(1), 61-77.

Krippendorff, K. (1980) *Content Analysis: An Introduction to its Methodology*. Beverly Hills, CA, Sage.

Lewicki, R. (1992). "Models of Conflict, Negotiation and Third-Party Intervention," *Journal of Organizational Behavior* 13(3), 209-252.

Lewicki, R. J., B. H. Sheppard, and M. H. Bazerman (1986). *Research on Negotiation in Organizations (Vol. 1)*. Greenwich, CT, JAI Press.

Malhotra, N.K., J. Agarwal, and M. Peterson (1996) "Methodological Issues in Cross-Cultural Marketing Research: A State-of-the-Art-Review," *International Marketing Review* 13(5), 7-43.

McGrath, J.E. (1982). "Dilemmatics: the Study of Research Choices and Dilemmas," in J.E. McGrath, J. Martin, and R.A. Kulka (Eds.), *Judgment Calls in Research*. Newbury Park, CA, Sage, pp. 69-102.

Moore, D. A., and J. K. Murnighan (1999). "Alternative Models of the Future of Negotiation Research," *Negotiation Journal* 15(4), 347-353.

Nakata, C. and Y. Huang (2005). "Progress and Promise: the Last Decade of International Marketing Research," *Journal of Business research* 58(5), 611-618.

Neale, M., and G. B. Northcraft (1986). "Experts, Amateurs, and Refrigerators : Comparing Expert and Amateur Negotiators in a Novel Task," *Organizational Behavior and Human Decision Processes* 38(3), 305-318.

Pfeffer, J. (1993). "Barriers to the advance of organizational science: paradigm development as a dependent variable," *Academy of Management Review* 18, 599-620.

Podsakoff, P. and D. Dalton (1987). "Research Methodology in Organizational Studies," *Journal of Management* 13(2), 419-441.

Podsakoff, P.M., S. B. MacKenzie, J. Lee and N. P. Podsakoff (2003). "Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies," *Journal of Applied Psychology* 88(5), 879-903.

Pruitt, D.G. (2005). "Field Experiments on Social Conflict," *International Negotiation* 10, 33-49.

Rozelle, R., and D. Druckman (1971). "Role Playing versus Laboratory Deception: a Comparison of Methods in the Study of Compromising Behavior," *Psychonomic Science* 25(4), 241-243.

Rubin, J. Z., and B. R. Brown (1975). *The Social Psychology of Negotiation*. New York, Academic Press.

Sackett, P. R., and J. R. Larson (1990). "Research Strategies and Tactics in Industrial and Organizational Psychology," in M. D. Dunnette and L. M. Hough (Eds.), *Handbook of Industrial and Organizational Psychology*. Palo Alto, Consulting Psychologists Press.

Scandura, T. A., and E. A. Williams (2000). "Research Methodology in Management: Current Practices, Trends and Implications for Future Research," *Academy of Management Journal* 43(6), 1248-1264.

Schaubroeck, J. and K. Kuehn (1992). "Research Design in Industrial and Organizational Psychology," in C.L. Cooper and I.T. Robertson (Eds.) *International Review of Industrial and Organizational Psychology (Vol.7)*. Chichester, UK, John Wiley, pp. 99-121.

Schriesheim, C.A., K. J. Powers, T.A. Scandura, C.C. Gardiner and M. J. Lankau (1993). "Improving Construct Measurement in Management Research: Comments and a Quantitative Approach for Assessing the Theoretical Content

Adequacy of Paper-and-Pencil Survey-Type Instruments," *Journal of Management* 19(2), 385-417.

Sekaran, U. (1983). "Methodological and Theoretical Issues and Advancements in Cross-Cultural Research," *Journal of International Business Studies* 14(2), 61-73.

Smith, W. P. (1987). "Conflict and Negotiation: Trends and Emerging Issues," *Journal of Applied Social Psychology* 17(7), 641-677.

Spector, P.E. (2001). "Research Methods in Industrial and Organizational Psychology: Data Collection and Data Analysis with Special Consideration to International Issues," in N. Anderson, D. S. Ones, H. K. Sinangil and C. Visavervaran (Eds.) *Handbook of Industrial, Work and Organizational Psychology. 1. Personnel Psychology*. London, Sage.

Stone-Romero, E. F., A. E. Weaver, and J. L. Glenar (1995). "Trends in Research Design and Data-Analytic Strategies in Organizational Research," *Journal of Management* 21(1), 141-157.

Thompson, L. L. (1990). "Negotiation Behavior and Outcomes: Empirical Evidence and Theoretical Issues," *Psychological Bulletin* 108(3), 515-532.

Tripp, T. M., and H. Sondak (1992). "An Evaluation of Dependent Variables in Experimental Negotiation Studies: Impasse Rates and Pareto Efficiency," *Organizational Behavior and Human Decision Processes* 51(2), 273-295.

Wall, J. A., and M. W. Blum (1991). "Negotiations," *Journal of Management* 17(2), 273-303.

Weber, R.P. (1990). *Basic Content Analysis (Second Edition)*. Newbury Park, Sage.

Wilkenfeld, J. (2004). "Reflections on Simulation and Experimentation in the Study of Negotiation," *International Negotiation* 9, 429-439.

Zartman, W.I. (2005). "Comparative Case Studies," *International Negotiation* 10, 3-15.

Table 1. Research strategies in negotiation^a

Research Strategy	1965-1994	1995-2004
Formal Theory / Conceptual Article	17.5%	26.7%
Case Study	2.2	3.8
Interview	1.2	2.3
Observation	0.4	0.7
Laboratory Experiment	65.5	48.8 ^b
Experimental Simulation	7.4	10.9
Field Study	2.6	2.1
Computer Simulation	0.4	0.2
Meta-Analysis	0.0	1.2
Sample Survey	2.8	3.5

^a $N_{\text{total}} = 1108$; $N_{\text{early}} = 501$; $N_{\text{recent}} = 607$.

^b Time-based regression analysis revealed a significant linear trend in the direction of the proportion: ‘-’ a significant decrease ($p < .01$) and ‘+’ a significant increase ($p < .01$).

Table 2. Research strategy by type of negotiation^a

Research Strategy	Context or Type of Negotiation			
	International & Peace Negotiations	Buyer / Seller Negotiations	Salary & Negotiations	Job Labor Negotiations
Theoretic/ Conceptual Articles	35	26	2	10
Laboratory Experiments	6	292	51	54
Experimental Simulations	9	51	16	7
Case Studies, Interviews, Observations, and Field Studies	15	15	5	18
Sample Surveys	4	8	2	11
Total	69	392	76	100

^a Crosstabulations are run with N = 637; the categories ‘crisis negotiations’, ‘environmental negotiations’, ‘other negotiations’ (e.g. social negotiations, liability negotiations, community negotiations), and ‘not applicable’ are omitted in this analysis; cells represent absolute frequencies.

Table 3. Research strategy by focal process of negotiation^a

Research Strategy			Theoretic/ Conceptual Articles	Laboratory Experiments	Experimental Simulations	Case Interviews, Observations, Field Studies	Studies, Sample Surveys
Focal Negotiation ^b	Process						
Negotiator Personality	%Early Period	4.4	82.2	11.1	0.0	0.0	
	%Recent Period	4.7	65.1	14.0	7.0	9.3	
Gender Differences	%Early Period	0.0	72.7	9.1	9.1	9.1	
	%Recent Period	17.4	60.9	8.7	0.0	4.3	
Cross-Cultural Negotiations	%Early Period	20.0	30.0	40.0	10.0	0.0	
	%Recent Period	22.4	20.4	22.4	18.3	16.3	
Teaching Training	%Early Period	37.5	50.0	0.0	12.5	0.0	
	%Recent Period	66.7	8.3	11.1	11.1	2.8	
Emotions	%Early Period	7.7	61.5	7.7	23.1	0.0	
	%Recent Period	20.0	64.4	11.1	4.4	0.0	
Ethics	%Early Period	0.0	50.0	0.0	0.0	50.0	
	%Recent Period	16.7	50.0	5.6	5.6	22.2	
Communication Interaction	%Early Period	18.3	73.7	9.0	4.6	0.8	
	%Recent Period	12.0	60.1	9.2	10.5	1.3	
Rationality & Bias	%Early Period	20.0	66.2	10.8	3.0	0.0	
	%Recent Period	11.8	67.7	15.0	3.2	2.4	
Mathematical/ game theory	%Early Period	47.3	51.4	1.4	0.0	0.0	
	%Recent Period	72.9	22.9	1.0	2.1	0.0	
Third-Party Influence	%Early Period	18.2	68.2	4.5	4.6	4.5	
	%Recent Period	20.0	40.0	25.0	10.0	5.0	

^a Crosstabulations are run with $N_{\text{total}} = 1108$; $N_{\text{early}} = 501$; $N_{\text{recent}} = 607$.

^b Focal Themes were coded as dummy variables to be able to account for multiple processes in one study; total percentages therefore exceed 100 for this aspect.

Table 4. Type of sample^a

Type of Sample	1965-1994	1995-2004
Psychology Students	12.5%	8.2%
Business or MBA students	14.2	35.0
Other or Non-Specified Students	54.7	37.1 ^{b-}
Professional Negotiators ^c	3.2	2.5
Managers	1.2	3.0
Public Sector Employees	2.2	3.0
Private Sector Employees	4.2	1.6
Mixed	5.9	7.6
Not applicable	2.0	2.1

^a $N_{\text{total}} = 858$; $N_{\text{early}} = 413$; $N_{\text{recent}} = 445$.

^b Time-based regression analysis revealed a significant linear trend in the direction of the proportion: ‘-’ a significant decrease ($p < .05$) and ‘+’ a significant increase ($p < .05$).

^c ‘Professional negotiators’ are interpreted as ‘all those whose core job is to negotiate’. We distinguish ‘managers’ as another class of experienced, real-life subjects who need to rely on negotiation skills as a necessary, but not exclusive part of their job.

Table 5. Construct validity and measurement approach^a

Characteristic	1965-1994	1995-2004
Construct Validation		
Reports of Reliability Estimates	21.6%	43.2% ^{b+}
Reports of Manipulation Checks	21.1	30.5
Exploratory Factor Analysis	5.2	5.3
Confirmatory Factor Analysis	1.0	2.6
Type of Dependent Variable		
Tangible Negotiated Outcomes	32.8%	23.1% ^{b-}
Behavioral or Decisional Outcomes	53.2	50.1 ^{b-}
Attitudinal Outcomes	9.7	11.3
Perceptual Outcomes	4.3	15.5
Number of Data-Sources		
Single	95.6%	94.0% ^{b-}
Multiple	4.4	6.0 ^{b+}

^a $N_{\text{total}} = 858$; $N_{\text{early}} = 413$; $N_{\text{recent}} = 445$, except for reports of manipulation checks $N_{\text{total}} = 727$, $N_{\text{early}} = 365$ and $N_{\text{recent}} = 362$ (laboratory and experimental simulations included only).

^b Time-based regression analysis revealed a significant linear trend in the direction of the proportion: ‘-’ a significant decrease ($p < .05$) and ‘+’ a significant increase ($p < .05$).

Table 6. Aspects of Statistical Analysis^a

Characteristic	1964-1993	1994-2004
Data-Analytical Approaches for Hypothesis Testing ^c		
Univariate Analysis of Variance	73.4%	75.3%
Multivariate Analysis of Variance	9.6	12.2 ^{b+}
Regression Analysis	11.1	28.1 ^{b+}
Correlational Techniques	31.8	37.1
Non-Parametric / Interpretative Techniques	29.6	25.7
Canonical Analysis (Discriminant)	1.2	0.5
Structural Equations & Path-Analysis	1.7	1.9
Meta-Analysis	0.2	1.9 ^{b+}
Cluster Analysis	0.0	1.0
Number of Dependent Variables		
Single	16.3	16.2
Two or three	54.7	54.9
Four or five	23.8	21.8
More than five	5.2	7.1

^a $N_{\text{total}} = 858$; $N_{\text{early}} = 413$; $N_{\text{recent}} = 445$.

^b Time-based regression analysis revealed a significant linear trend in the direction of the proportion: ‘-’ a significant decrease ($p < .05$) and ‘+’ a significant increase ($p < .05$).

^c Statistical techniques were coded as dummy variables to be able to account for multiple techniques in one study; total percentages therefore exceed 100 for this aspect.

Appendix 1. List of Journals

Academy of Management Journal
Administrative Science Quarterly
American Behavioral Scientist
American Sociological Review
Basic & Applied Social Psychology
Behavioral Science
British Journal of Social Psychology
Bulletin de Psychologie
Communication Monographs
Computational Intelligence
Conflict Resolution Quarterly
European Journal of Social Psychology
Games & Economic Behavior
Gedrag en Organisatie
Group Decision & Negotiation
Human Communication Research
Human Relations
International Journal of Conflict Management
International Journal of Human-Computer Studies
International Journal of Intercultural Relations
Journal for the Theory of Social Behaviour
Journal of Applied Behavioral Science
Journal of Applied Psychology
Journal of Applied Social Psychology
Journal of Business & Psychology
Journal of Business Research
Journal of Conflict Resolution
Journal of Consumer Research
Journal of Economic Behavior & Organization
Journal of Economic Psychology
Journal of Experimental Psychology
Journal of Experimental Social Psychology
Journal of Language & Social Psychology
Journal of Management
Journal of Marketing
Journal of Marketing Research
Journal of Mathematical Psychology
Journal of Organizational Behavior
Journal of Personality & Social Psychology
Journal of Pragmatics
Journal of Psychology
Journal of Psychology: Interdisciplinary & Applied

Journal of Social Behavior & Personality
Journal of Social Issues
Journal of Social Psychology
Journal of Socio-Economics
Mathematical Social Sciences
Mediation Quarterly
Negotiation Journal
Organizational Behavior & Human Decision Processes
Organizational Behavior & Human Performance
Peace & Conflict: Journal of Peace Psychology
Personality & Social Psychology Bulletin
Personnel Psychology
Political Psychology
Psychological Bulletin
Psychological Reports
Psychology & Marketing
Public Personnel Management
Rationality & Society
Simulation & Games
Simulation & Gaming
Small Group Research
Social Forces
Social Psychology Quarterly
Sociological Quarterly
Sociometry
Theory & Decision

Appendix 2. Coding scheme

CODE 1 Primary Research Strategy

1. Formal Theory / Conceptual Article	6. Experimental Simulation
2. Case-Study	7. Field Study
3. Interview	8. Computer Simulation
4. Observation	9. Meta-Analysis
5. Laboratory Experiment	10. Sample Survey

CODE 2 Longitudinal Study: Yes / No

CODE 3 Sample Size:

CODE 4 Type of Sample:

1. Psychology Students	6. Public Sector Employees
2. Business & MBA Students	7. Private Sector Employees
3. Other Students or Non-Specified	8. Mixed
4. Professional Negotiators	9. Not Applicable
5. Managers	

CODE 5 Primary Type of Dependent Variable:

1. Tangible Negotiated Outcomes
2. Behavioral or Decisional Outcomes
3. Attitudinal Outcomes
4. Perceptual Outcomes

CODE 6 Number of Data-Sources: Single / Multiple

CODE 7 Number of Dependent Variables in one Study:

CODE 8 Reports of Reliability Estimates: Yes / No

CODE 9 Reports of Manipulation Check: Yes / No

CODE 10 Data-Analysis :

1. Univariate Analysis of Variance	7. Exploratory Factor-Analysis
2. Multivariate Analysis of Variance	8. Confirmatory Factor-Analysis
3. Linear Regression Analysis	9. Cluster-Analysis
4. Correlational Techniques	10. Canonical Analysis (Discriminant)
5. Non-Parametric Techniques and Interpretative Data-Analysis	11. Structural Equations (EQS, Lisrel, Amos) and Path-analysis
6. Meta-Analysis	

CODE 11 Content / Context / Setting:

1. International Negotiations	6. Labour Negotiations
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<ul style="list-style-type: none"> 2. Peace & Diplomatic Negotiations 3. Sales, Price, Commercial & Business-Negotiations 4. Salary & Job Negotiations 5. Crisis-Negotiations (hijacking, threat, blackmail,...) 	<ul style="list-style-type: none"> 7. Environmental Negotiations 8. Other (e.g. social negotiations, liability negotiations,...) 9. Not Applicable
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CODE 12 Focal Process / Theme:

<ul style="list-style-type: none"> 1. Negotiator Personality and Characteristics (e.g. experience) 2. Gender Differences 3. Cross-Cultural Differences 4. Teaching and Training of Negotiator Skills 5. Emotions in Negotiation 6. Ethics in Negotiation 	<ul style="list-style-type: none"> 7. Communication, Interaction, Social Perception, Social Cognition 8. Negotiator Rationality & Bias 9. Mathematical Models & Game-Theory 10. Third-Party Influence 11. Conflict
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CODE 13 Parties in Negotiation:

- 1. Dyadic Negotiations
- 2. Multi-Party/ Team Negotiations

CODE 14 Nationality of First Author:

CODE 15 International Collaborative Article: Yes / No