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Identifying Macro Phases Across the Negotiation Lifecycle

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Abstract
Existing models of negotiation as a process are incomplete and do not show an overall, start to finish lifecycle. Current phase based models lack clearly defined criteria that identify phase boundaries. After reviewing existing models, the paper identifies macro phases, clarifies phase boundaries, and delivers a bird's eye view model of negotiation supported by examples in academic literature and the public record. The enhanced model proposed here provides a practical negotiation guideline and roadmap previously left unclear in the literature. The proposed model contributes to theory around negotiation by defining the boundaries of a sequence of macro phases in negotiation and enhancing the model through business process modeling. With the enhanced model, academics and practitioners can share a viewpoint for understanding, communicating, and further developing negotiation models.

Keywords Negotiation · Phase model · Conflict resolution · Process model · Business process model

1 Introduction

Negotiation is not only a vital human interaction, it has become an academic interest, crossing areas of study such as Management (Walton and McKersie 1965; Brooks 1984; Lewicki et al. 1996), Psychology (Spector 1977; Bazerman et al. 2000), International Business (Adair et al. 2013), Law (Craver 2012), and International Relations (Zartman and Berman 1983; Saunders 1985; Stein 1989a; Kremenyuk 2002), among others. Negotiation has been theorized variously, as dimensions (Lax and Sebenius 2006), DNA (Ott et al. 2016), teams (Colosi 2003), games (Avenhaus and Zartman 2007), values (Tjosvold et al. 2003), and jazz (English 2003). Process is also a way to view negotiation. Academia has previously identified the importance of process to negotiation (Zartman and Berman 1983; Holmes 1992; Hopmann 1996; Brett et al.

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2003; Druckman 2007; Vetschera 2013; Filzmoser et al. 2016) and the challenge of understanding those processes (Weigand et al. 2003). Some negotiation processes have been mapped at detailed, disaggregated levels and applied in e-commerce situations such as auctions and surge pricing. Nonetheless the total lifecycle of negotiation must be considered and modeled in terms of macro phases with well-defined boundaries in order to better theorize the activities and sequences of negotiation. Various phasic process models are reviewed in this paper to (1) confirm that evidence for macro phases, from inception to completion of a negotiation, can be found; and (2) determine the boundaries of those phases.

Current negotiation models lack completeness as they may exclude activities before or after the main negotiation interactions. Further, they may lack features such as feedback loops which return negotiators to previous phases with new information. Also missing are decision gates where the negotiators decide to quit or continue. Such features, common to business process modeling (BPM) and project management, would make models more accurate and usable to theoreticians, educators, and practitioners of negotiation who will benefit by gaining new theory building tools, teaching insights, and best practices. Additionally, an overall phase model may provide support for better-structured automated or artificial intelligence (AI) systems such as chatbots and virtual assistants that conduct tasks associated with negotiation. This article draws on documented negotiations primarily from business and intergovernmental instances, though these may ultimately fall into different genres, to contribute the following to the conversation about negotiation phases: evidence of phases, their characteristics, boundaries of phases, transition across the model including loops and decision gates, and a full macro phase process model of the negotiation lifecycle.

2 Review of Existing Phase-Based Negotiation Models

Negotiation literature has considered the process of negotiation, offering a variety of phase-based models explicated in graphic or written form since the 1960s. Phases, also referred to as stages, are an appropriate approach for understanding negotiation because negotiation is a sequence of activities that progresses over time with differentiation among major activities that segment the end to end negotiation (Holmes 1992). Additionally, Holmes (1992) refers to Abbott (1986) in pointing out that a phase model, if accurate, allows detection of a current phase and prediction of coming actions. Such phases represent large scale structures of the overall negotiation and in this article are termed macro phases in order to distinguish them from meso and micro level phases, smaller episodic (Holmes 1992) or sequence based (Brett et al. 2003) structures. Identifying phases at any level requires criteria. Efforts have thus been made to identify meso-phase structures by sequence of activity (Fells et al. 2015), and micro-phase structures through punctuation of sequences of interactions, for example, by breakpoints (Brett et al. 2003) or turning points (Druckman and Olekalns 2013; Putnam and Fuller 2014).

Previous work has used text analysis to describe transitions among topics and strategies (Brett et al. 2003; Olekalns et al. 2003; Druckman and Olekalns 2013), nonetheless these descriptive and stochastic efforts have not always clearly indicated transitions to

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new macro phases (Druckman 2007). Analysis of interactions has been used to separate meso and micro phases based on structural dissimilarities in communication acts identifying phases that recur in various kinds of face to face negotiations (Koeszegi et al. 2011; Vetschera 2013); these smaller phases however reside within an aggregated, macro phase which arches over the interaction of the parties. The analysis of meso and micro phases sheds light on the workings of the macro phase where parties interact. It cannot however reveal the nature of other macro phases throughout the end to end negotiation. The whole negotiation extends from early considerations of the environment in which the deal and parties exist all the way through final phases when agreements are implemented and parties take stock of their performance. Rather than identifying the boundaries of macro phases through statistical or text analyses, this study defines boundaries reliably by outputs such as artifacts and documents (Clegg and Boardman 1996; Weske 2012), in addition to major shifts in focus (Jeong 2016), and the content of communications (Adair and Brett 2004).

High level phasic segmentation of negotiations may not reflect real life because it is messier than linear models where there is no communication or reverse movement among phases (Brett et al. 2003). Although these authors criticized phase models as simplistically progressive, they nonetheless use terms like "forward progress" (Brett et al. 2003) revealing at least some agreement that progress is inherent in a negotiation (Holmes 1992).

Table 1 below provides an overview of macro phasic models of negotiation including recent and older models that are still relevant in academic writing. Table 1 excludes models that handle only meso-phases or micro-phases.

2.1 Summary of Existing Models

Randolph's four phase model included macro phases roughly covering the lifecycle of a negotiation with a post agreement possibility within the terminal phase (Randolph 1966). Zartman and Berman's (1983) model, however, is truncated to three phases including a pre phase (Stein 1989b) and then a post phase (Spector and Zartman 2003) which was added later. The current paper builds on these and other models to arrive at six phases identified by activities and boundaries using the framework of business process modeling (BPM). BPM theorizes process building from a sociological point of view, namely by building models from narrative and information about actors and goals (Koubarakis and Plexousakis 2002; Wang et al. 2013). The resulting models are seen as activity driven processes, and are not based solely on characteristics. Further, these process models have clearly defined boundaries conferring the benefit that observers and users can reliably and reproducibly identify any given phase. Such models have aggregated activities and thus can be deconstructed to achieve more detailed process models and workflow models (Freund and Rücker 2012; Weske 2012).

The models compared in Table 1 are widely disparate, nonetheless all explicitly depict negotiation as a series of steps processing to a conclusion. None of the phasic models reviewed combine all the necessary features and scope of an overall process model for negotiation. Some lack phases at the beginning or end, some focus on phases below the macro phase level, some are strictly linear in sequence and lack feedback

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Table 1 Elements of current macro phase models

	Lifecycle	Feedback loops	Loop to start	Identifies actors	Decision gates	Follow up
Douglas 3-phase, 1962 (Douglas 1962)	NA	NA	NA	IM	NA	NA
Joint problem solving process, 1965 (Walton and McKersie 1965)	NA	EX	EX	EX	NA	NA
Randolph suggested model (Randolph 1966)	EX	NA	NA	PA	NA	IM
Morley and Stephenson (1977)	NA	NA	NA	IM	NA	NA
Gulliver processual, 1979 (Gulliver 1979)	PA	EX	NA	EX	NA	NA
Three stage + pre and post (Zartman and Berman 1983; Stein 1989b; Spector and Zartman 2003; Zartman 2008)	EX	EX	NA	EX	NA	EX
Saunders five-part process	EX	NA	NA	NA	NA	NA
Brooks (1984) and Brooks and Odiorne (1992)	PA	EX	NA	NA	EX	NA
Craver (1986, 2012)	PA	NA	NA	EX	NA	NA
Heller et al. (1988)	EX	PA	NA	NA	PA	NA
Win–Win Spiral, 1997 (Boehm et al. 1997)	PA	IM	EX	NA	NA	NA
Graphic roadmap, 1999 (Straus 1999)	EX	NA	NA	EX	NA	NA
Intentional agent, 2000 (Lopes et al. 2000)	NA	EX	NA	NA	EX	NA
MPARN, 2001 (In et al. 2001)	PA	EX	NA	IM	NA	NA
4-phase dance, 2005 (Adair and Brett 2005)	NA	NA	NA	NA	NA	NA
Demirkan et al. (2005)	PA	EX	NA	IM	NA	NA
CBI mutual gains, 2010 (2010)	PA	NA	NA	EX	NA	NA
Five stage, 2010 (Lewicki and Hiam 2010)	PA	NA	IM	IM	NA	NA
Fells et al. (2015)	PA	NA	NA	NA	NA	NA

EX explicit, *IM* implicit, *NA* not appearing, *PA* partial and explicit

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loops, others lack decision points to proceed, return or stop. These omissions may stem from authors creating descriptive models common to their industry or activity such as value creation late in the sequence (Craver 2012) or no preparation phase in hostage negotiations (Taylor 2002). Missing throughout are clearly identified phase boundaries, leaving negotiators and theorists uncertain about phase definitions. The proposed model has all of these features and intends to provide a symmetrically normative (Raiffa et al. 2002) model applicable to many kinds of negotiation as a guideline, not a straitjacket, because negotiations may be unique in content and context.

3 Discussion and Enhanced Model

This paper proposes not only a pragmatic process model for understanding negotiation but also a rigorous one (Phalp 1998), that is, a model suitable for analysis because it can be reproduced, diagnosed, and improved based on the diagram. Processes may take input from other (Ting-Toomey 2005) organizations despite being set in action by only one organization (Weske 2012), underlining the fact that negotiation involves organizations as well as individual actors.

While taking on negotiation from the point of view process and sequence, this paper does not reject other approaches. As with other models, sequential phases are a cognitive attempt at sense making of human interactions. Dimensions have been proposed as a way to understand the changes in thinking and action of individuals as they maneuver towards their goal, operating more in one or another dimension though never divorced from any of them (Lax and Sebenius 2006). The advantage of the dimension viewpoint is that the actor can operate in any or all dimensions at the same time, avoiding the need to consider processual terms such as forward, backward, progress, and movement. A model with parallel processes could be developed to emphasize that some processes may be active throughout a negotiation event. A process viewpoint nonetheless affords the freedom to move forward or back in the sequence through feedback loops which indicate that the step is to be partially or completely iterated with new information.

Variance models (Holmes 1992) are intended to show cause and effect and may indirectly show sequence or process. Mechanisms such as moderating effects make this kind of analysis suitable for understanding decision making. However, cause and effect are not always connected in a linear fashion and the related insights may or may not improve understanding of negotiation as a process. Facework, meanwhile, seeks to explain negotiation choices and moves based on notions of managing respect and embarrassment (Ting-Toomey 2005). Chinese negotiation has been described as receiving high impact from mechanisms around face, relationships, cognition, norms, and mores (Graham and Lam 2003) rather than from process. This kind of viewpoint provides a rich context for understanding negotiation, but may not generalize to non-Chinese cultures. Conversely, it remains to be seen if process models are applicable to negotiations in Chinese contexts.

The enhanced model presented below does not disaggregate the macro phases at lower levels of process. The model presented here is an idealized, broadly prescriptive model developed from negotiation literature, observations of practices in business,

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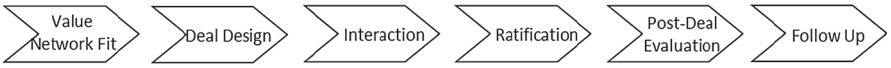

Fig. 1 Simple macro phase negotiation model

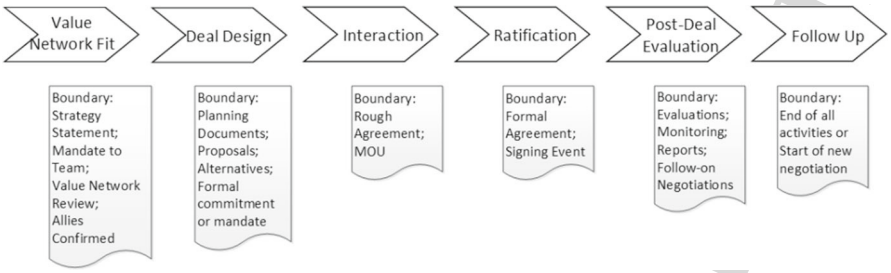

Fig. 2 Macro phase model with boundaries

politics, and other areas, as well as experience. Diverse organizations will have specific needs and abilities or gaps in abilities, therefore this paper does not propose the model as suitable for all parties and situations. Likewise, erratic sequences may appear for various reasons as reported elsewhere (Mintzberg 1971; Heller et al. 1988). The simple model presented in Fig. 1 includes only sequential steps and not feedback loops, decision points, or actors; the enhanced model shown in Fig. 3 includes these elements. The rationales for the phases and their boundaries are explained below after further description of the overall model.

A methodology to identify boundaries between phases is necessary. This article employs combinations of boundary-defining evidence appropriate to the research questions (Adair and Brett 2005), namely events and artifacts of negotiations. Change of content has been used as an identifier of phases (Adair and Brett 2005) where the intervals between phases are guided by theory and matched to empirical samples. In modeling of business processes, phase boundaries can be determined based on outputs such as documents and partially or fully completed products (Weske 2012) or by change of interaction (Jeong 2016). In projects, phase boundaries have been identified by artifacts such as agreements and signed plans or designs (Clegg and Boardman 1996). A project refers to an undertaking with a clear beginning and end with a unique outcome as a goal (Binder 2007; Project Management Institute 2015); a negotiation matches this definition as it is not a permanently on going operation and the intent is, for example, to come to customized agreements. In order to accomplish the identification of phase boundaries, negotiations published in academic sources and news media were reviewed for the presence of such boundary defining outputs and events. The Fig. 2 shows the macro phases and summarizes the phase boundary identifiers.

Phase boundaries are a location for decision gates where a decision is made to continue, return to an earlier phase, or quit. Similar decisions may occur within a phase leading to termination of a negotiation or return to a previous phase. Unintentional termination or breakdowns may also occur, leading to the end of the negotiation or a return to a previous phase. The lines in Fig. 3 show termination only at the end of a phase, however termination within the phase has the same result, i.e. exit from

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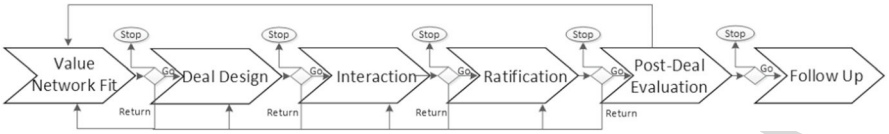

Fig. 3 Enhanced macro phase model

the negotiation or return to an earlier phase. Nonetheless, internal breakdowns and the exits or return cycles they cause are not shown here; processes internal to a phase must remain the subject of future articles. Negotiations, despite fulfilling the definition of project, have not been modeled with the decision gates widely found in decision making processes in projectized organizations (Mascitelli 2007; Thamhain 2013). The following figure shows the macro level model with decision gates and feedback lines. The loop is closed with the fifth phase potentially leading back to new starts.

Based on the overview provided by the macro phase model above, key aggregated activities, and outputs of each phase, are described below. Each macro phase is presented individually. Examples are provided from business and other sources. Business examples are particularly appropriate because overall negotiation times may be in the context of months or a few years and success criteria often simple. Of course, complex business projects may last decades. Additionally, business negotiations and customized agreements are myriad, though the deliberations and interactions are usually inaccessible. Some intergovernmental examples are included, the contents of which may be relatively public, nonetheless, agreements may take years to complete and decades to confirm whether implementation and follow up agreements meet success criteria. The sub-activities of aggregated activities are not described or modeled here; such work will have to wait for future research though analyses have been made of the interior workings of a pre-negotiation stage (Saunders 1985; Stein 1989a; Hopmann 1996) and a postagreement stage (Spector and Zartman 2003). The Antecedent, Concurrent, and Consequent framework (Sawyer and Guetzkow 1965; Druckman 1973, 1983, 2005) shows that processes internal to negotiation, especially in the Interaction phase, are factors that impact outcomes and that they occur sequentially between the setting of antecedents and gathering of consequents. The framework may point the way toward processes within other phases.

3.1 Value Network Fit Phase

The activities aggregated in this macro phase amount to a strategic review in which the organization's goals, allies, suppliers and competitors are considered in terms of the global value network and organizational strategy. These tasks are seen as distinct from tasks of other phases as they must lead the parties to the table, especially in international governmental negotiations (Stein 1989a). The value network includes the partners, suppliers, competitors, and regulatory bodies that impact the organization at a strategic level (Allee 2000). Not all deals are strategically important to the organization, therefore this phase may be reasonably omitted or shortened by the negotiators and their constituents. Transformative deals will necessarily require deeper

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review, whereas mundane ones will require little or no strategic review. This phase correlates roughly to the Search for Arena phase of Gulliver (1979), the Diagnosis phase of Zartman and Berman (1983), Saunders' Defining phases (Saunders 1985), Stein's prenegotiation (Stein 1989a), and the CBI (2010) Prepare phase. In this model, however, the final decision makers and lead negotiator work with other strategic level staff to, for example, analyze stakeholders including allies and competitors, set broad goals and parameters, and assess the strategic fit of those goals up and down the value chain. Other actions aggregated here include identifying and contacting potential allies and counterparties, co-opting organizations, assessing likelihood of success, motivating parties to negotiate, determining the best alternatives to negotiated agreement (BATNA) of each party, and initiating steps to strengthen one's BATNAs while optionally weakening BATNAs of others. Taking these steps in advance of the interaction with counterparties allows participants to know or estimate the interwoven needs and interests of all parties in order to smooth problem solving and prepare for contingencies that may arise. The end of this phase is marked by the creation of overall goals, confirmation of allies, a written statement, or unwritten understanding of purpose. Ideally, there follows a considered decision to continue to the next phase, return to the value network fit phase, or abandon the project.

Examples The 1997 negotiation involving UPS and a labor union highlights the value network fit phase. Specifically, the union's methodical preparation gained the support of workers, politicians, and other stakeholders such as regular customers not normally part of a labor dispute (Miller 1997; Minchin 2012), exemplifying the strategic planning that characterizes the phase. Similarly, in the 9 months before acquiring the company Autonomy in 2011, Hewlett-Packard sought a possible acquisition after considering its allies and competitors carefully and conducted due diligence with the internal reports (Gupta et al. 2012) that characterize the content and activities of the phase. The Hewlett-Packard board's acceptance of the potential acquisition in early July 2011 represents a strategic organizational commitment identifying the end of this first phase (Gupta et al. 2012). This phase is described in the context of intergovernmental negotiations as well (Saunders 1985; Stein 1989a).

3.2 Deal Design Phase

This macro phase aggregates the activities of preparing offers and variations of packages to be offered as well as seeking new value creation opportunities. This phase corresponds partly to the dimension of the same name in the 3D negotiation model (Lax and Sebenius 2006) but differs in that it includes team building such as the preliminary and information phases (Craver 2012), planning phases and further information discovery (Brooks and Odiorne 1992). The activity of setting negotiation goals found in this phase differs from the goal setting of the previous phase in that the general goals are refined to be more specific. If the team is not self-organized, the main actors will include the lead negotiator, the team intended to be in direct contact with the counterparties, and other team supports. At the same time, the lead negotiator is likely to liaise with the decision makers and strategic directors of the organization in order to synchronize goals and process.

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The end of this phase is defined by confirmation of those goals, revised information about BATNAs, allies, counterparties, and a set of potential offers and solutions (Zartman and Berman 1983) which may structure the coming interactions (Stein 1989b). The outputs of the phase may be in document form such as planning sheets, a project dashboard for the negotiation, statements about goals, and artifacts such as alternative plans or the briefs described by a diplomat looping through Deal Design and Interaction phases (English 2003), or a commitment or mandate to negotiate (Saunders 1985) or framework agreement (Stein 1989b). In the case of acquisition, due diligence documentation may be presented (Shapiro 2013). Finally, there is a decision gate to continue to the next phase, return to an earlier point in the deal design phase, return to the value network fit phase, or abandon the project.

Examples Labor negotiation transcriptions (Douglas 1962) show repackaging of offers by both sides when the teams are meeting separately from their counterparties. The parties cycle through joint interactions as they privately redesign deal packages.

3.3 Interaction Phase

Despite the preparations in the first two phases, the Interaction macro phase, which aggregates the activities of the parties' communicating, means that new information, new solutions, new creativity, and new plans will inevitably arise. This phase may start with a formal presentation to the counterparties (Hendon and Hendon 1994) or the exchange of an claim letter and response in a legal case (Ministry of Justice UK 2017). It is in the Interaction phase that the offers and ideas will be jointly developed until acceptable unless the negotiation is abandoned. The lead negotiator, if there is one, and the team members will be actively engaged with the counterparties during this phase; however the leader and team may keep in contact with the final decision makers and call upon the skills of other supporters as needed.

Discussion about the Interaction phase is well developed in the literature about negotiation. Some writers take negotiation to mean only the time during which parties are interacting (Walton and McKersie 1965; In et al. 2001; Adair and Brett 2005); conversely others refer to all activities as negotiation. Therefore, the proposed model prefers the term interaction to emphasize the increased communication among parties in this phase. Other writers, however, see interactions as a phase, or phases, of a greater cycle, such as steps three through seven of MPARN (In et al. 2001), the Consensus Building Institute's create and distribute phases (2010), and phases three to five of Gulliver's developmental model (Gulliver 1979). Gulliver's cyclical model (Gulliver 1979) and Lopes' intelligent agents model (Lopes et al. 2000) focus on the Interaction phase. MPARN, the cyclical model, and the interactive agents model show how iterative this phase is, as do the explanations around the CBI model (2010). Interactions, brief or long, can include proposals, and counter proposals (Moberg 1997; Vuorela 2005). The detail settling stage (Zartman and Berman 1983) refers to a period of heavy interactions, though their previous stage also includes communication among the parties. The end of the Interaction phase is marked by the cessation of these activities due to agreement or failure to agree. The resulting agreement may be formal or informal,

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binding or non-binding (Fells et al. 2015), and may not be in its final form due to review or adjustment by strategic decision makers or legal counsel (Douglas 1962).

Examples An example of reaching the Interaction phase boundary is found in the transcripts of a labor-management negotiation. Just after general verbal agreement is reached the negotiation teams explicitly state that the agreement, despite enjoying their high confidence, is subject to ratification by the union membership (Douglas 1962). The interaction phase in Hewlett-Packard's 2011 acquisition of Autonomy concluded with overall agreement by the CEOs of the financial aspects (Gupta et al. 2012). In intergovernmental negotiations, this has been described as settling the details (Zartman and Berman 1983) or arranging (Saunders 1985). Finally, there is a decision gate to continue to the next phase, return to an earlier point in the interaction phase or to an earlier phase, or cancel the project. In a sales negotiation between a UK equipment maker and a Finnish client (Vuorela 2005), the decision gate was used once to return to the Deal Design phase from Interaction phase and then later to quit the negotiation.

3.4 Ratification Phase

This macro phase aggregates the activities of presenting outcomes to final decision makers and the attempt to gain their ratification as well as having legal experts finalize the language of an agreement. Final decision makers can include superiors, a board, or peers such as partners. While ratification activities are largely internal to each party, experts from all parties may work together in order to ensure smooth finalization. Experts involved in ratification are often not members of the negotiation team. Failed ratification may mean a return to the Interaction phase with changes to be discussed and agreed with counterparties. In the case of intergovernmental negotiations, the agreement may be put in force and initially adopted while proceeding through ratification by national legislatures or other bodies in the countries party to the agreement (Spector and Korula 1993; Barrett 1998).

The end of this phase is marked by the output of a formalized agreement and perhaps ritual enactment, for example in a signing ceremony. Thereafter, a decision gate is reached to continue to the next phase, return to the Interaction phase or other previous phase, or abandon the negotiation.

Example The agreement jointly created in the Interaction phase must be confirmed by the final decision makers before and after legal write up, as in the case of the rough agreement reached by Hewlett-Packard and Autonomy that was later ratified by the board (Gupta et al. 2012). An intergovernmental example is the Montreal Protocol with its national ratification processes (Barrett 1998).

3.5 Evaluation and Monitoring Phase

This macro phase aggregates the following activities: implementation and execution of the agreement, monitoring of performance, enforcement, strategic evaluation of the deal, evaluation of the team and its members, formalization of learning points, renegotiation considerations, and relationship maintenance, among others. Strategic level evaluation of outcomes and satisfaction requires analysis by the strategic level

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managers. Evaluation of the team's negotiation prowess may be conducted by the team, their observers, immediate leaders, and human resources staff. Monitoring of the execution of the agreement, as well as evaluation of the agreement itself, may include the counterparties or consultants and specialists in addition to the negotiation team. This phase includes the activities of the execution of outcome phase (Gulliver 1979), as well as the assessment and performance review phase (Brooks and Odiorne 1992). It is similar to the follow through phase of the CBI (2010) model but does not include activities for developing enforcement mechanisms which occur in the Interaction phase, or at latest in the Ratification phase, and are included in the final agreement before implementation.

There are various possible formal or informal outputs to this phase: an improvement plan for the negotiation participants, intent to improve or break the relationship, evaluation of the counterparties' implementation of the agreement, periodic or ongoing monitoring, and commitments for follow up negotiations and renegotiations. Thereafter there is a decision gate to start a new deal with the partner(s) or exit the agreement. Thus the fifth phase may be the final phase. Alternatively, the actors may return to the first phase to consider the strategic value fit of new negotiation topics. A third path is to continue into an optional phase in order to follow up with negotiation of incomplete elements of the main agreement or renegotiation of certain aspects as the environment and project develop.

Examples Post deal evaluation may lead to a dramatic results such as intentionally breaking an agreement as with Starbucks and Kraft (Baertlein 2013); or the firing of a top manager and legal challenges as in the case of the Hewlett-Packard acquisition of Autonomy in 2011 (Gupta et al. 2012). Empirical data suggests that this may be the longest phase while acknowledging that the follow up phase, which handles incomplete agreements and renegotiations (Heller et al. 1988), may have schedules extending decades. Monitoring of agreements and relationships has been described in management literature as being widely used to confirm commitment (Ghosh and John 1999) while evaluation of teams and individuals after negotiation has been reported in various industries (Ertel 1999). Treaties and trade agreements may be formally monitored by agencies in each participating country as well as by think tanks seeking to confound or confirm the expected benefits.

3.6 Follow Up Phase

This phase aggregates the activities of working out incomplete aspects of a deal and negotiating changes to a main agreement as the environment around the deal evolves. This phase is seen as optional in that it is not necessarily found in all negotiations that reach the evaluation and monitoring phase. A follow up phase is more likely to appear in the wake of agreements that are highly complex such as service level agreements, multi decade agreements for resource development, major infrastructure construction, and intergovernmental regimes. Such deals are more likely to generate incomplete contracts, defined as elements of an agreement that must be defined and negotiated as conditions mature or change (Bolton and Dewatripont 2005), or issues needing clarification. Oppositely, this phase is less likely to appear where deals are relatively

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simple or can be swiftly executed. Parties may enter this phase voluntarily in order to improve their outcomes in post-settlement settlements (Raiffa 1985) or postagreement negotiations (Spector and Zartman 2003). The phase is therefore started, if at all, where the agreement unavoidably leads to further refinements and agreements (Spector 2003) and for reasons such as improving, completing, or clarifying an existing agreement. The phase closes when the parties are satisfied and/or the execution of the agreement is finished. The phase may continue as long as agreements are in force or evolving, potentially forever (Spector and Zartman 2003). Participants in this phase may include any or all of the actors previously involved, or new specialists, agencies, organizations, and media (Korula 2003).

Examples: The Ichthys offshore project in Western Australia, now approaching production in 2018, has spurred buyer and supplier negotiations in addition to those that conceived the project in 2006 and the start of project execution in 2012 (INPEX 2016). Intergovernmental environmental treaties frequently spawn follow up agreements and treaties with significant follow up activity (Spector and Korula 1993). Examples of such negotiations include intergovernmental agreements such as the mediterranean action plan (Wagner 2003) and climate protocols (Spector and Zartman 2003).

3.7 Tasks by Actor

The figure below shows the macro phases with the actors who are the main participants. A pool and swim lane format is used to link the actors, individuals or groups, to the activities identified in the phase descriptions above. These actors include final decision makers, the lead negotiator, general and specialist team members, and other supporters (in-house or consultants) who may not interact with the counterparties, and the counterparties themselves. The figure below summarizes actor responsibilities from the point of view of one negotiating party and includes the counterparties only in phases where direct interaction is unavoidable, though all parties could communicate in other phases and would likely have parallel processes of their own. For the sake of simplification, feedback loops and decision gates are not included. The actors' positions depicted in Fig. 3 are drawn from negotiation literature described in Baber (2016) (Fig. 4).

3.8 Negotiation Genres

If the identification of phase borders through activities and artifacts is considered successful, researchers might apply phase border analysis to identify various kinds of negotiation. For example, phases in hostage or crisis negotiation may be defined by intelligence gathering efforts or by the initiation of verbal exchanges among the parties that are unlike those of other negotiation genres (Holmes and Sykes 1993). Meanwhile, delivery of certain formal documents may define phases in legal negotiations (Craver 2012). In trade negotiations on the other hand, phase borders such as the presentation of packages of mutual commitments might appear (Hampson and Hart 1999). Very complex negotiations such as seemingly intractable relationships and wicked problems (Rittel and Webber 1973; Conklin 2006) may be characterized by a cycle of planning

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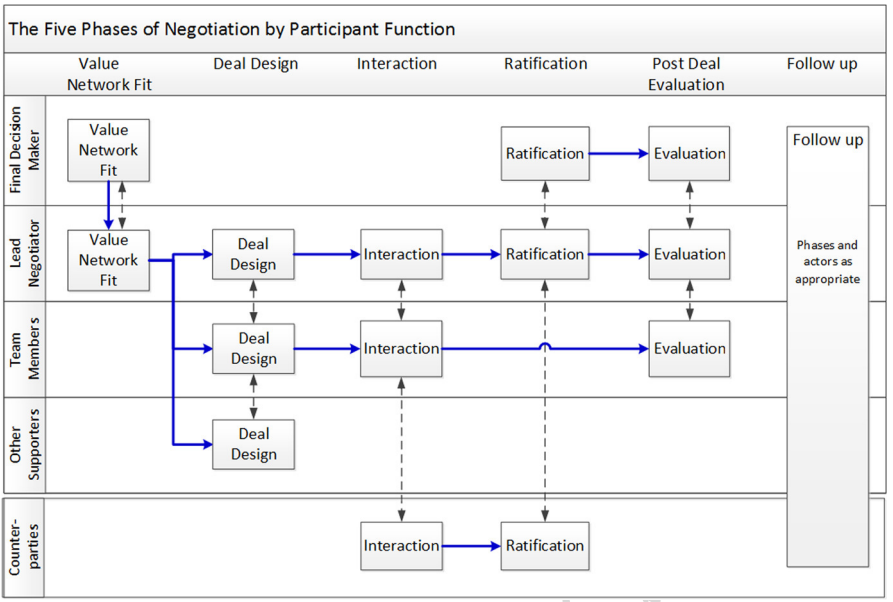

Fig. 4 Negotiation phases by activity of participant

phases that reveal or block solutions unlike other kinds of negotiation problem solving. Such problems and intergovernmental negotiations may have very long pre-negotiation phases (Stein 1989b) impacted by environmental developments such a strengthening or weakening of major allies and adversaries. Thus macro phases may not be the same for all sorts of negotiation and models specific to negotiation genres may be necessary; however, such investigations and genre identification remain to be considered.

4 Conclusion

The questions posed in this article asked whether evidence for macro phases from inception to completion of a negotiation could be found; and whether the boundaries of those phases could be determined. Evidence is found in a variety of sources including current negotiation models, media reports about negotiations, and in transcripts previously published in academic sources. Table 2 below shows the phases with examples of their characteristics, content, and boundary definitions.

Based on the model presented, theory builders may be able to identify features that are uniform across all negotiations or develop models for specific genres of negotiation such as hostage or crisis negotiation. Indeed, negotiation researchers may find that universal aspects of negotiation do not conflict with specialized genres. Genre definitions in turn may help educators and practitioners in targeting their training and expertise more effectively. Educators may develop training and evaluation tools specific to a phase or phases, in order to build competence among learners or to ascertain their skill levels. Evaluators of organizational ability may use the model to determine negotiation

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Table 2 Phase boundaries, outputs, and activities

	Start boundary	End boundary	Outputs and artifacts	Character	Main activities
Value network fit	Idea(s) mooted	Mandate to team; allies coopted	Board level statement; written directive; verbal statement; meeting notes; budget allocation	Strategic planning; discovery	Strategic review; consideration of alliances and high level goals
Deal design	Kickoff meeting with team	Start of main interaction with counterparties	Formal or informal plans; meeting notes; models; spreadsheets; formal mandate	Design of offers and deal packages; discovery	Planning how to accomplish goals and present or react to other parties; research
Interaction	Main interaction with counterparties	Agreement/resolution	Written agreements; MOU; overall agreement; schedules of resources etc.	Iterative verbal and written interaction among parties in synchronous meetings or asynchronous media exchanges	Communicating; proposing; reacting; joint problem solving; conceding; building relationship
Ratification	Presentation of agreement to final decision makers	Ratification; signing ceremony; disbursement of resources	Formal agreement; contract; ratification or certification; MOU	Completion and ratification	Presentation to/agreement with final decision makers; legal review
Evaluation and monitoring	Review and evaluation; monitoring of execution	End of evaluation or monitoring period	Evaluation and monitoring reports; recommendations for improvement	Evaluation and monitoring	Evaluation of outcomes; review of negotiators; monitoring of execution
Follow up	Resolution of outstanding issues; problems or questions arise	Completion of an overall agreement or incomplete agreements	Agreements; addenda; revisions; reports; project statements	Incomplete agreements and refinements	Handling of incomplete agreements; adjustment and refining of issues through renegotiation

weaknesses for improvement. Practitioners in turn may be better able to plan negotiations and allocate resources appropriately. Further, they may find themselves abler to communicate the process and the state of a negotiation to coworkers and superiors allowing for better synchronization with constituents. The lifecycle model presented here may provide a reference point for modeling the next levels of process, namely the business process and workflow levels (Karagiannis 1995; Polančič 2012). Such models have potential for improving the process of negotiation by promoting innovation and efficiency (Hammer and Champy 1993; Marsa-Maestre 2008; Hammer 2009) and for approaching pareto optimal outcomes (Turan et al. 2013). This lifecycle model and any subsequent lower level models may help connect the academic discussion around negotiation to management science and management of operations because BPM is well developed in those fields. Lower level processes may also support automation of negotiation processes which will inform development of the next generation of automated interactive tools for gathering information, identifying interests, and creating solutions. Such tools, in the form of chatbots, virtual assistants, and AI agents, will require implementation of process modeling at various levels, from architecture to highly disaggregated micro processes.

One limitation here is that negotiation processes are dynamic and thus their changing nature is difficult to model (Lindsay et al. 2003). In particular, this is true of the Interaction phase where emerging information discovered by the parties may impact the negotiation substantially. A large number of cases and transcripts must be reviewed in order to strengthen the model. Negotiations in some contexts, especially business and family matters, are essentially private, so it is difficult to find reliable published sources. Negotiations in intergovernmental contexts on the other hand may have phases that last years and implementations that last decades, making their complete and timely analysis difficult.

Previous negotiation models have not delivered a full overview of the negotiation process, nor have they clarified the macro phases and defined the phase borders through which a negotiation passes. The enhanced model's contributions provide an overall process that identifies the macro phases clearly with defensibly segmented phase boundaries and characteristics. Further, this model provides clear information about moving forward or backward after each phase; other models may hint at this but do not communicate it explicitly. Fundamentally, this model serves as a solid base from which to develop more complex models at levels of activity deeper in the overall process. It is hoped that the proposed model will spur improvement of this model as well as development of other models that reflect realities as well as ideal processes in organizations of all sorts.

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