

# Dialogue or Monologues

## The effect of topic concurrence on negotiation results

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Presented to the ECPR General Conference: August 2015, Montréal<sup>1</sup>

### Abstract:

Deliberation is described as an exchange and mutual evaluation of validity claims to bring about a common solution to a problem or a conflict. Thus, according to one crucial aspect of deliberation, negotiation partners argue about the same topics, rather than each addressing their own agendas. To our knowledge, no attempts have been made to investigate, whether engaging in such dialogues affects the negotiation outcome in a deliberative setting. To this end, we exploit the potential of text analysis methods. In a laboratory setting, we ask students to extensively negotiate a randomly assigned conflict before making a decision. By using topic modelling on this real language corpus, we identify the topics addressed by the actors and calculate the topic concurrence (i.e. the extent to which actors talk about the same topics). We then estimate the effect of topic concurrence on negotiation outcomes.

## 1 Introduction

The resolution of conflicts involves communication – in almost every instance. In fact, the grounding principles for modern democracies are based on an institutionalisation of channels to communicate among opposing groups: this is why Parliaments are the most important legislative body of democratic states. However, in the last decades, the role of communication has been increasingly sidelined by trade over political issues. Dryzek (1990) calls this the liberal pole of democracy, which is, according to him, “dominated by voting, strategy, private interests, bargaining, exchange, spectacle and limited involvement” (p. 13). This observation was the point of critique of some political theorists who introduced a new concept of political decision-making: The theory of deliberative democracy (Dryzek 1990, 2000; Mansbridge 1980; Gutmann and Thompson 1996, 2004).

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<sup>1</sup>Work-in-process - please do not quote without permission from the authors.

Advocates of deliberative democracy criticise the effects of an instrumental rationality<sup>2</sup> in politics, among others for repressing individuals and being inefficient when confronted with complex social problems (Dryzek 1990, 5f.). They hold that the mere aggregation of preferences that occurs in voting does not sufficiently legitimize a democratic decision. Rather, voting, as an option only if consensus cannot be found, should follow authentic deliberation about the issue to be decided upon.

The process of authentic deliberation is defined differently by different authors. While Dryzek (2000) holds that “the only condition for authentic deliberation is [...] the requirement that communication induce (sic!) reflection upon preferences in non-coercive fashion.” (p.2), Fishkin and Luskin (2005) call ‘weighing’ the root of deliberation. They “take deliberation to be a weighing of competing considerations through discussion” (p. 285) that is informed, balanced, conscientious, substantive and comprehensive. Habermas (1983, 97 ff.) lists a number of conditions for argumentation<sup>3</sup>, which he draws from Alexy (1978): Among them are the constraint not to contradict oneself and the demands to be consistent, to stick to definitions, to be authentic, and to offer reasons for challenging propositions by others. The discourse should be free for everyone and the actors’ participation should not be prevented through any means of coercion.

The most important aspect of deliberative democracy is the claim that actors are able and willing - after the deliberative process - to yield their interests to reason, or *the power of the better argument*<sup>4</sup> (Habermas 1981, 1983; Schaal and Ritzi 2009; Bächtiger et al. 2010). This claim is challenged empirically. Is it actually the case that a deliberative process has an effect on negotiation outcomes, especially when private interests exist? For answering this question, the deliberative process has to be operationalized. As it is a rather complex construct, as can be seen by the definitions above, we will have

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<sup>2</sup> Instrumental rationality is defined as the capacity to devise, select and effect good means to clarified ends (Dryzek 1990, 4).

<sup>3</sup> Habermas himself does not use the term deliberation until much later, but is considered one of the founding fathers of the theory of deliberative democracy.

<sup>4</sup> This is the term used by Habermas. We will use it so that the theoretical origins are still recognised. We do not put value on the word *better* in such a way as measuring the *goodness* of an argument. Thus, we do not claim that a researcher can decide what contents constitute a *better argument*. The *better argument* is rather defined as the most convincing argument in every individual interaction.

to limit this examination to one aspect of deliberation. We follow Habermas who, in contradiction to Kant or Rawles, emphasises the importance of real dialogues that actually have to be carried out and cannot be substituted by quasi-dialogic monologue (Habermas 1981, II, 145).

In a set of laboratory controlled observations, we measure the ability of actors to actually talk to each other, when negotiating over a given conflict in which two stakeholders prefer different outcomes. We do this by using topic models on recorded utterances of role-playing participants in a laboratory. The topics that can be identified will then be assessed according to their usage by the different actors. The more the two actors refer to the same topics the higher is the topic concurrence of the debate. We hypothesise that the level of topic concurrence has an effect on negotiation outcomes.

In the next section, we theoretically assess the ability of deliberative communication to affect negotiation results and present hypotheses that can be tested in this regard. We then shortly justify the approach of a laboratory observation study. Consequently, we describe how the data was generated, before operationalising the key variables. The section on data description deals to a large extent with the method of topic modelling and we present graphs that are used to illustrate the topic concurrence measure. In the final section, we present the results of logistic regression models which assess the correlative effect of topic concurrence and of different interest constellations on the negotiation outcomes. In the conclusion we put these results into perspective, suggesting how this examination can improve the study of deliberation.

## **2 Deliberative Democracy and the effect of deliberation on negotiation results**

While the theory of deliberative democracy focuses on the legitimacy of political decision-making – its normative aspect – the assumed effects of communication that comes close to the deliberative ideal are considered empirical facts. This consideration does lack empirical evidence, however. Although Habermas (1991) compares his ideal discourse

situation with a vacuum in physics, which is almost always assumed but almost never really achieved (p.160), real discourse can exist in forms that follow the deliberative ideal to a greater or minor extent. Thus, scholars of deliberation have the opportunity to derive and review testable hypotheses connecting the different degrees of deliberative communication with the suggested effects.

We begin this section by giving a short overview over the empirical research on deliberative democracy. We then limit the scope of this paper to one aspect of the deliberative ideal of communication: the interaction of those participating in a decision making process. More specifically, we link the ability of negotiators to talk about the same topics to the ideal of deliberative communication. In the third subsection, we generate hypotheses concerning the effect of topic concurrence on negotiation results.

## **2.1 The empirical turn of the theory of deliberative democracy**

Empirical research of deliberation requires the possibility of measurement. So far, the most successful and widely used approach of measuring deliberation is the *discourse quality index* (DQI) developed by Steenbergen et al. (2003). They manually code speeches by parliamentarians and measure deliberation on several dimensions: participation, level of justification, content of justification, different forms of respect and constructive politics. In earlier attempts, Holzinger (2001, 2004) distinguishes argumentation and bargaining on the basis of speech acts (Searle 1969). Kotzian (2007) uses frame analysis for a similar distinction. And Naurin (2007, 2010) tries to capture deliberation by interviewing actors in different political decision-making fora. These measures were mainly used as dependent variables for discovering conditions that were conducive for successful deliberation.

When we turn to the effect of deliberation, few studies deal with measuring how close the communication comes to the deliberative ideal. They rather assume that analysing institutions which are theoretically considered to be conducive to deliberation can be considered equal to actually observing the communicative process. Fishkin and Luskin (2005) use deliberative polling events and report that participants gener-

ally profit from their deliberative activities in terms of changing opinions (Ackerman and Fishkin 2002), gaining information, and changing voting intentions. Deliberation also leads to a greater understanding of ones own and oppositional positions (Chambers 1996; Gutmann and Thompson 1996). A realisation of mutual dependency was also reported (Chambers 1996; Pearce and Littlejohn 1997; Yankelovich 1991).

When considering the results of a decision-making process, Grönlund et al. (2010) report an increased willingness for cooperative behaviour, while Bächtiger et al. (2005) report an increase of consensus building, and Niemann (2006) attributes enduringly stable agreements to genuine debate. What has been missing so far is an examination of the causal relationship between a deliberative process and the substantive results of decision-making in negotiations.

## **2.2 Concepts of deliberative communication with a focus on topic concurrence**

So far we have criticised that few studies actually use a concept of the communicative process in deliberation, in order to scrutinise the effect of deliberation on negotiated outcomes. The DQI was originally used to examine, under what institutional conditions deliberation is most likely to take place.<sup>5</sup> Only recently has the DQI been used as an independent variable, explaining Inter-group appreciation in Belgium (Caluwaerts and Reuchamps 2014) or opinion change in a European deliberative poll on third-party migration (Gerber et al. 2014). However, no attempt has been made to draw a line between the deliberative quality and the substantial results of negotiations. Maybe this is due to the challenges of comparing negotiation outcomes in real-world politics. To overcome this problem, we use experimental data that allows us to measure and compare the outcomes of a larger number of comparable negotiation processes.

The DQI measures deliberation along the dimensions of participation, justification, respect and constructive politics. In this paper, we argue that a simpler concept might

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<sup>5</sup> Bächtiger and Tschentscher (2007) mentions consensus institutions, veto power, party discipline, two chambers, non-publicity and a deep thematic polarisation as the most (positively and negatively) influential contexts for deliberative behaviour.

already be able to capture a great deal of the effect of deliberative communication<sup>6</sup>: the extent to which actors actually engage in dialogue about the contested topics in comparison to quasi-dialogic monologues, in which every actor only brings forward their own points, without addressing the other actor's concerns. This concept is partly inherent in the dimensions of participation and respect.

In an ideal dialogue, actors not only bring forward new points but also weigh and comment on new points by others. Therefore every participant was given the chance to contribute their stance to the subject, and only if no more objections are uttered can there be a consensual solution. On the other hand, if actors only present their arguments, without commenting on the arguments brought forward by the other actors, the actors refrain from assessing the quality of the other arguments. Thus, dialogue is understood as a there and back of claims and objections. In addition, when comparing dialogue to quasi-dialogic monologues, referring to the points of the other and maybe even considering their benefits is a sign of a high deliberative quality of communication. Moreover, the deliberative ideal expects participants to deal with such claims and to find reasons why the respective claim is wrong, not helpful or not agreeable.

Taking these points into consideration, the distinction between dialogue and monologues, when assessing negotiation behaviour, does reflect a number of points that can be considered to follow the ideal speech situation according to the theory of communicative action, while other aspects (like justification and accommodation) are neglected.

The idea of dialogue will be operationalised as topic concurrence in the next section. Here, we continue to flesh out an explanation that is consistent with the theory of communicative action, creating hypotheses, how the ability of negotiation partners to talk to each other, rather than past each other, is able to affect the decisions taken by the participants within a negotiation.

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<sup>6</sup> We still believe that the above dimensions are relevant, and can be tested individually in other examinations, but focus on a very basic understanding of deliberation now, in order to establish the importance of looking at the deliberative process and not only on institutions, when assessing the outcomes of decision-making processes.

## 2.3 Topic concurrence and its effects on negotiation results

The theory of deliberative democracy or the corresponding theory of communicative action by Habermas, predicts many positive effects from a process of deliberation, and has a clear (even though not universally agreed upon) picture of what constitutes the ideal of a deliberative process. One striking vagueness, however, exists: The causal mechanism that links the deliberative process with its effects is not clearly portrayed. In the meta-theoretical description of communicative action by Habermas, one can however find some suggestions as to how deliberation works, which is why we focus on his works in this theory section. Unfortunately, these descriptions do not take socio-psychological, cognitive, or economic considerations into account.

Habermas talks of an exchange of validity claims: statements that are supposed to be empirically correct, normatively right and authentic. Every utterance and even actions claim validity on these three levels, to the best knowledge of the actor.<sup>7</sup> If a validity claim is considered unproblematic, because it is generally accepted by all people affected by the decision, it is considered to belong to the common *lifeworld*. The role of dialogue in negotiations is then an exchange of validity claims and challenges of the validities among the actors. The common *lifeworld* functions as a resource that should restrain the discourse to go on infinitely.

As negotiation partners exchange validity claims, they engage in a debate in which they start agreeing on the factual basis of their decisions and the norms that are supposed to influence their decisions. In political decision-making, however, interests are generally perceived to be the driving force behind decisions. So, we need to ask: Under what conditions do actors refrain from influencing the discourse towards furthering their interests and making decisions that support only their own benefits?

We first need to define the term interests. Interests are best described as the regard for one's own benefit or advantage. In economics, the term utility, defined as the ability

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<sup>7</sup> Even though the actors might actually be aware of their claims not to be valid, the utterance itself does claim validity. In such a situation, the sincerity criterion of authenticity would be false. But even non-sincere statements only make sense, when an actor claims them to be sincere, otherwise the deception would not work.

of a commodity to satisfy human wants, is often used to reflect the different values which different people place on the same benefits.

So, how do people make decisions? The most basic model of human decision making in economics is the model of *homo economicus*. It assumes that every individual has a predefined set of goals and a rank order of transitive preferences. It is assumed that people act rationally<sup>8</sup> to attain their goals.

The field of behavioural economics has emerged because people do not always act according to the predictions of a pure *homo economicus* model. Especially if communication is allowed, very few actually follow that model. So, other factors must play a role. Economists have thus tested innumerable norms that might influence decisions of participants in various experimental settings.<sup>9</sup> However, few test various norms against each other, rather than using the *homo economicus* model as the comparison model. And to our knowledge only Winter et al. (2012) assume that different people follow different norms and incorporate that fact into their study.

How can norms be defined? We side with Bicchieri (1990) who perceives norms as a result of living in a social group and defines “a social norm (N) in a population (P) [...] as a function of the beliefs and preferences of the members of P if the following conditions hold: (1) Almost every member of P prefers to conform to N on the condition that almost everyone else conforms, too. (2). Almost every member of P believes that almost every other member of P conforms to N” (p. 842). She asserts that conformity is not a dominant strategy. The preference to abide by a norm is based on the condition that everyone else does.

According to the theory of communicative action, decisions are not made in individual self-reflection of a cost-benefit analysis or of the norms one considers valid. Rather, the decision depends on a common process of finding the norms appropriate for the given situation. This process is done by exchanging validity claims. If they disagree with the validity of any of the claims, actors need to challenge these claims. In

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<sup>8</sup> The meaning of the term rationality differs between the rational choice literature and the theory of deliberation. Here, it means that an individual acts as if balancing costs against benefits in order to arrive at an action that maximizes his personal advantage (Friedman 1953).

<sup>9</sup> Summaries can be found in Kagel and Roth (1995), Camerer (2003), and Plott and Smith (2008).



the end, only those decisions that are no longer challenged are considered to be valid. If actors are no longer able to give reasons for why they disagree, they will have to accept that the claim is valid, creating a binding effect of the communication.

Because these actors have no more reasons for acting in another way, the supported action should be taken. Once an actor had to admit that a proposed norm is valid, he is bound to that norm. Habermas (1981, II, 114) highlights that it is not the fear of being sanctioned, which is responsible for restricting the actor's choice of behaviour, but rather his realisation that the not negated (and thus valid) norm is supported by the most relevant reasons. Habermas (1991, 144) does realise that duties derived from a valid norm are able to bind the will of an actor, but they will not bend it. He claims that in the world we know, the autonomous will attains effectiveness only to such an extent as the motivating power of good reasons is able to prevail against other motives (Habermas 1991, 110). Acting against a valid norm, and thus against one's own better knowledge, would not only lead to moral allegations of the others, but would also trigger one's own self-criticism – that is one's own bad conscience. Thus, the *power of the better argument* is most forceful, when actors are willing to engage in communicative action and are willing to submit their interests to reason. In addition, Habermas (1981, II, 163) emphasises that language does not only transfer and update the commitments that have existed before communication, but increasingly also induces commitments that are motivated by the process of reasoning.

According to that idea, a large variety of norms can potentially be activated, if validity claims and justifications are offered in their support. This activation of norms works via mutual and honest agreement to act under the assumption that all actors are willing to abide by the obligations that they have assumed with their speech acts. This is only possible if all actors are aware of the different norms and might, in general, be able to accept them.<sup>10</sup>

Some such norms might be inherent in the topic. Other norms focus more on the distribution of benefits. Two of the latter type are welfare-efficiency and fairness, which

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<sup>10</sup> It should be mentioned that self-interest can serve as an applicable norm in some situations as well. And actors who believe in the values of self-interest might need powerful arguments for being swayed to consider another norm as applicable to the situation at hand.

will be used as examples for norm selection in this study. If all participants to the conflict have to agree to a given decision, as is one of the principle of deliberative decision-making, they will not give away any of their interests for nothing. They might hand over some of their interests for good arguments, i.e. for reasons that others might fare better, if they refrain from following their interests. But this is less likely to happen, if they have to give more than the other might receive. Thus, the process of exchanging validity claims should end in a welfare-efficient result. In addition, if several possible outcomes are similarly efficient, the actor that fares worst with a given result has incentives to still argue for a fairer option – an option in which not one party has to carry the costs for another party, if this can be avoided. Thus, both welfare and fairness play a substantive role.

In this paper, we emphasise the there and back of validity claims, by focusing on topic concurrence, neglecting to scrutinise how much justification is inherent in the debate. The concept of topic concurrence only assumes that when people talk to each other, they can either try to to move from one topic to the next with each of them giving their opinion. Or they talk past each other in such a way that one actor mentions the opinions or demands about a number of topics that are important to her, while the other actor does not react by asking for clarifications, agreeing or disagreeing to the points mentioned and generally moving to the next topic, which allows his own points to be mentioned. With such a communicative process, if we stay with Habermas, no new commitments can be induced and the transfer and updating of already existing commitments would be more difficult, leading to fewer cooperative solutions. The topic concurrence, now, reflects the degree in how far a group of negotiating people is following the first of these two extremes more than the other. In order to reassess the theoretical relationship empirically we test hypothesis H1:

H1: The higher the topic concurrence, the higher is the probability of a cooperative conflict solution.

In some cases the preference orders of the different actors differ in such a way that the choice of defection and increasing one's private pay-off is less risky for one actor: The only outcome in equilibrium is the best option for the advantaged actor. In ad-

dition, the dominant strategy of this actor forces the other actors to choose between cooperation or their worst outcome: They have no credible option to punish dominant selfish behaviour without paying for it. In such a situation there are no incentives for the advantaged actor to follow the dominated strategy, unless a norm binds him to follow it, even though it is against his own interests.<sup>11</sup> As there are no material costs involved for following the private interests, such asymmetric interest constellations might be an even bigger challenge for the norm selection mechanism. To establish if this is actually the case we test hypothesis H2:

H2: In asymmetric interest constellations, the probability of a cooperative conflict solution is lower.

### 3 Research strategy

Within the empirical turn of the theory of deliberative democracy, scholars try to assess the effects of institutions that are prone to deliberation (Fishkin and Luskin 2005; Bächtiger et al. 2005) or the role of deliberative communication in parliaments, committees or international negotiations (Bächtiger et al. 2005; Naurin 2010; Niemann 2006). The ability to control for the positions of the deliberating actors is missing so far. Furthermore, when comparing different negotiations in small group decision-making in the real world, the topics, conditions and positions differ to such an extent that a comparison which is based on large N methodology is confronted with great challenges (See an attempt in Bächtiger and Hangartner 2010). On the other hand, some experiments have been conducted in order to assess the role of deliberation (Sulkin and Simon 2001; Schei et al. 2008; Hibbing and Theiss-Morse 2002). These experiments do however only provide the possibility to deliberate, but do not measure the processes themselves.

In this approach, we attempt to use yet another path: the positions as well as the topics should be under control of the investigator, keeping the conditions completely

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<sup>11</sup> In accordance with the compilation of two-actors-two-options games by Holzinger (2008) who follows Zürn (1992) in calling such constellations *Rambo games*, I call the advantaged player *Rambo*.

the same. This control can be achieved by using the exact same set-up for a large number of observations.<sup>12</sup> These points call for an experimental study. However, people's ability to communicate face-to-face in order to negotiate their conflict is one of the most important aspects of a deliberative process. We therefore allow for fewer experimental control and intend to observe, rather than induce, how close the communicative process reflects the deliberative ideal. Consequently, as face-to-face communication cannot be controlled by the researcher, an observational study, with experimental control over some conditional variables, was conducted.

## 4 The Data

In late 2011 and early 2012, two rounds of pretests were conducted in preparation of the research project *Der zwanglose Zwang des besseren Arguments? Der Einfluss deliberativer Kommunikation auf die Verhandlungsergebnisse in Zwei-Personen-Entscheidungsexperimenten*. 96 students and employees of Konstanz University participated in this *negotiation study*.

The project aims at analysing face-to-face communication under laboratory controlled conditions and comparing its effect to experimentally induced interests that vary by the amount of money the participants can gain depending on their negotiated solution to the given conflict. While the background story of one conflict stays as similar as possible, the interests are varied by using different two-by-two matrix games, in which each actor has a choice between two options.

Further, in the pretest four different background stories have been tested. In general, the background stories are supposed to reflect the world of experiences of the participants, so that they will not have too many difficulties to imagine the role which they are supposed to represent.

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<sup>12</sup> The data used in this paper is the result of pretests and therefore we only reach an N of 48. The ongoing research project will generate an N of 240.

## 4.1 Data Collection

Upon entering the negotiation laboratory, participants were randomly assigned to one of the two roles, Ricky or Chris. They then received an oral and a written task description before being asked to go to their working stations. There, they filled in a questionnaire and read the conflict story which described their role and position in the upcoming negotiation. Once both participants finished their preparations, they were asked to join at the negotiation table, where they got instructions for the use of the recording devices. They were reminded that they should negotiate for at least 30 minutes but had one hour in total to come to a solution. After having settled and agreed upon their solution, they were asked to return to their working stations, where they completed another questionnaire. In the first question, they were asked to make their final decision. They were reminded that, whatever the agreed upon solution, they are now free to decide for themselves and that the final pay for the session would depend solely on this decision. After completing the questionnaire, the participants were individually invited to the observation room and disbursed according to their and the other participant's decision. Thereafter, they were asked to leave the room through a back door and reminded that they are not supposed to wait for the other participant.

## 4.2 The Background Stories

One of the main purposes of the pretest was to test the applicability of different conflict stories, so that the upcoming project should only work with one story. In the pretest, four different stories were tested. The participants were always called Ricky and Chris<sup>13</sup>.

In the first scenario – *shared flat* – Chris is angry at Ricky for never cleaning up the kitchen after having visitors in the evening. Chris wants Ricky to clean up in the evening, before going to bed. Ricky on the other hand values the fact that she is sharing

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<sup>13</sup> The names are chosen as gender-neutral names, so that male and female participants could relate to the conflict story. If I refer to one of the actors as he, this is only for simplicity but can also mean that either participant is female and vice versa.

a flat with other people and is unsatisfied about not having had the opportunity to actually get to know her new flatmate Chris, as she is always retreating to her room when coming home. She wants Chris to participate more in shared flat activities.

In the second scenario – *party* – the two actors are planning to throw a party together. But they have problems with cleaning up on the next day, because of various other obligations. So they try to convince each other that they have reasons not to participate in cleaning and that the other one should do the job alone.

The third scenario is called *coffee shop*. Here, both Ricky and Chris work in a coffee shop and both have to work together on a Sunday afternoon. On short notice their boss asks them to take an extra shift on Sunday morning, but they both have other plans for that time. So they both try to convince the other that he should take on the morning shift alone, while explaining, why they themselves are not able to do it.

Ricky and Chris have to write a *seminar paper* in the fourth scenario. The task is to write a paper in group work, but they both had teamed up with another partner who was supposed to do the main work. However, both partners dropped the seminar, and so Chris and Ricky have to decide who is able to put some work into the shared paper. They try to convince the other to do the work, while they themselves have other obligations at the time until the deadline.

The general structure of all stories is the same and both participants in the end have to decide if they want to fulfil the task which the other participant asks of them or not. Obviously, the stories vary significantly in their content, but slight variations were also necessary to adapt the stories to the different interest constellations – with as few changes as possible.

## **5 Operationalisation and Description of the Variables**

In this section we describe the variables that are used in the analysis. We strongly focus on the measure of topic concurrence. After having described the coding of the

outcome variable, we need to explain the way, how the topic concurrence measure was created. We first introduce our approach to topic modelling, before continuing to visualize and describe topic actor networks in order to convey the intuition of the explanatory variable in this paper. Then, we outline how the topic concurrence was calculated. We will then introduce the different game theoretic models that are used to operationalise interests, before the section ends with gender as a control variable.

## 5.1 The negotiated solutions

The phenomenon we're trying to explain in this experimental set-up is the substantial result composed of two individual decisions. After the discussion, the participants retreated to their respective working stations where they were given a post discussion questionnaire. The first item in the questionnaire posed the question, if they wanted to fulfil the task that the other player asked of them or not. The participants were reminded that the payment they will receive exclusively depends on this decision. They were no longer allowed to communicate while making this decision.

The negotiated solution is the outcome that is reached by the two individual decisions. This leads to a 2-by-2 decision matrix and four possible outcomes. Potentially, more fine-grained or theoretically more interesting decision problems could have been used (for example an ultimatum game style decision could be theoretically very interesting), but this would mean that, in order to measure the decisions in a meaningful way, the decision has to reflect the theoretical concept, it has to be translatable into money which the participants can earn, and simultaneously it should work as part of a background story. As such an endeavour can be expected to over-strain the participants' ability to connect their decision with the final pay-off, we decided to have them make a very simple decision: Yes or No.

Outcome one is the result of both participants saying Yes. This result appears 34 times in the data. Outcome two is reached, when Chris says No and Ricky says Yes. It appears twice in the data. Outcome three appears 12 times. Here Ricky says No and Chris says Yes. The No - No outcome did not appear at all. I call the decision to say Yes

cooperation. Thus outcome one is defined as the cooperative solution. This is coded 1, while all other outcomes are coded 0. Thus, of the 48 cases, 34 were coded as 1 and 14 were coded as 0.

By coding the dependent variable in this way, we assume that the decision to take the action is comparable over all stories. This assumption appears justified since the stories are created in similar ways, and the given number of pieces of information were used as a framework that was held constant over all stories.

## 5.2 Topics

Before we can introduce the explanatory variable, we first need to identify the different topics that the participants did talk about. Since the total negotiation corpus consists of 4862 individual utterances, an automated approach to defining the different topics was used. Grimmer and Stewart (2013) give an overview over different ways of automated text analysis tools. We decided to use an adaptation of the standard Latent Dirichlet Allocation (LDA) (Blei et al. 2003). In our modification, we first process the most descriptive utterances (utterances with the highest number of nouns) and the story descriptions to generate a reliable topical structure, which is afterwards complimented with the less descriptive and shorter utterances. In addition, a very strict stop-word removal has been applied on the text before loading it into the topic modelling component. Furthermore, we use only nouns as utterance features while processing the topics, in order to avoid a topic chaining. Using this strategy we were able to ensure robust topic modelling results, even while processing a noisy and heterogeneous corpus.

One strength of having face-to-face communication in a laboratory controlled environment is the participants' freedom to bring in their own creativity to solve the given conflicts. The chosen method for defining the topics allows us to validate some topics by comparing them to the story-specific instructions and simultaneously allowing more topics to appear – even some topics that might cut across the four different back-



ground stories. By deploying several statistical heuristics we set the number of topics to 20, as this produces the most separable topical structure.

In figure 1 we present an overview over all utterances assigned to one topic each. On top, the story descriptions can be seen. Underneath, the utterances are ordered chronologically within the observations and the observations are ordered according to their ID-numbers. These ID numbers are ordered according to the background story: 1-12 for *shared flat*, 13-24 for *party*, 25-36 for *coffee shop* and 37-48 for *seminar paper*

We can observe that the topic modelling algorithm is doing a good job in identifying the different stories in the part of the descriptions. In addition, these topics still play a major role, when participants use natural language, but other topics also play a role.

### **5.3 Topic concurrence - the explanation**

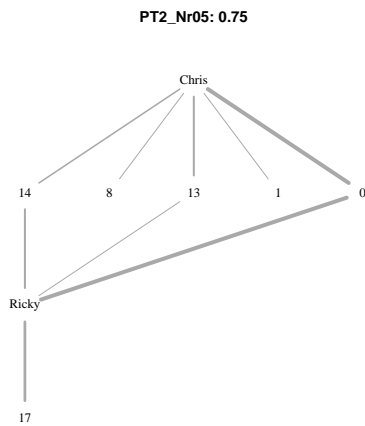
In the next step, we now want to see, if within one observation, the participants playing the role of Chris talk about the same topics as the participants playing the role of Ricky. To clarify the intuition, topic actor networks are used, in which each node connects one actor with one topic for every utterance – the vertices being the roles and the topics. Graphically, the number of connections between the actor and the topic make the edge wider. In some cases, in which the topic concurrence is low, one actor refers to certain topics more frequently than the other actor, while in cases in which the topic concurrence is high, the differences in edge size are not remarkable. Figures 2 through 5 give examples. In the appendix, the topic actor networks of all observations can be found.

We define the topic concurrence as the resemblance of topic usage of two speakers throughout an experiment. To measure this, we make use of the probability feature vector of each utterance produced by LDA, in contrast to the maximum probability that was used in the topic actor networks. Since each utterance is uniquely assigned to one actor, all probability feature vectors of the utterances associated with that actor



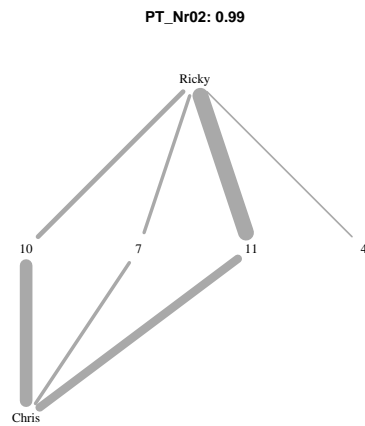
**Figure 1:** All utterances assigned to one topic, making use of LDA topic modelling. Red lines are uttered by Chris, blue lines by Ricky; satiation reflects the similarity to the given topic

**Figure 2:** Example of low topic concurrence with few topics



**Note:** Topic Actor Network of observation 5 in the 2012 pretest round, created with the R-package *igraph* (Csardi and Nepusz 2006). The actors Chris and Ricky discuss 3 different topics, while Chris talks a bit about topics 1 and 8 and Ricky talks substantially about topic 17. The size of the edges is proportional to the sum of utterances with the maximum probability, weighted by that probability. The topic concurrence score is 0.75. The place of the vertices is purely graphical and has no meaning.

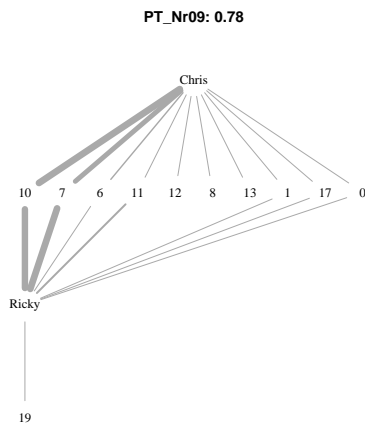
**Figure 3:** Example of high topic concurrence with few topics



**Note:** Topic Actor Network of observation 2 in the 2011 pretest round, created with the R-package *igraph* (Csardi and Nepusz 2006). The actors Chris and Ricky discuss 3 different topics, while Ricky has a small monologue on topic 4. The size of the edges is proportional to the sum of utterances with the maximum probability, weighted by that probability. The topic concurrence score is 0.99. The place of the vertices is purely graphical and has no meaning.

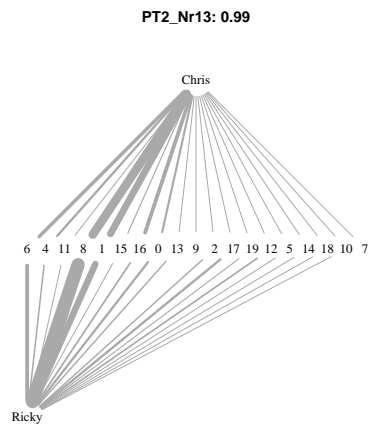
can be aggregated. After normalization, this results in a feature vector for each actor describing her usage of topics throughout the experiment. By calculating the angular concurrence between the feature vectors of two actors, their topic concurrence is derived. In our computations we calculate the cosine similarity of the actor-aggregated topic vectors. The theoretically possible numbers reach from 0 (no concurrence) to 1 (complete concurrence). In our data set, the topic concurrence measure takes values from a minimum of 0.62 to a maximum of 0.99. The mean value is 0.91 and the standard deviation is 0.07.

**Figure 4:** Example of low topic concurrence with many topics



**Note:** Topic Actor Network of observation 9 in the 2011 pretest round, created with the R-package *igraph* (Csardi and Nepusz 2006). The actors Chris and Ricky discuss 7 different topics, while Chris talks about three more topics that Ricky does not mention. Ricky on the other hand talks about topic 19 on his own. Topics 6 and 11 differ in the importance given by the two actors. The size of the edges is proportional to the sum of utterances with the maximum probability, weighted by that probability. The topic concurrence score is 0.78. The place of the vertices is purely graphical and has no meaning.

**Figure 5:** Example of high topic concurrence with many topics



**Note:** Topic Actor Network of observation 13 in the 2012 pretest round, created with the R-package *igraph* (Csardi and Nepusz 2006). While Chris and Ricky give almost the same importance to 17 different topics, only two more are mentioned by Chris. The size of the edges is proportional to the sum of utterances with the maximum probability, weighted by that probability. The topic concurrence score is 0.99. The place of the vertices is purely graphical and has no meaning.

## 5.4 Interests and Interest Constellations - the opposing explanation

The theory of communicative action states that in deliberation, actors have to put aside their own interests in order to be able to yield to the better argument. We therefore disagree with Fishkin (1997) and following publications in the Deliberation Day setting, where it is argued that deliberation can only take place in an interest free forum. Thus, we need to control for the effect of interests, when assessing the coordinating power of dialogues against monologues. Interests have been induced by the amount of money that participants can earn. In the experimental studies of behavioural economics, such

an approach is widely used. In addition to the basic endowment, the participants receive an additional sum for each step in their given preference order.<sup>14</sup>

**Figure 6:** The game theoretic models in strategic form

|            |                           | Welfare |    | Fairness |    |    |
|------------|---------------------------|---------|----|----------|----|----|
| symmetric  | <i>Prisoner's Dilemma</i> | Chris   |    |          |    |    |
|            |                           | Yes     |    | No       |    |    |
|            |                           | Yes     | S1 | S2       | S3 | S4 |
|            |                           | Ricky   | 3  | 1        | 2  | 4  |
| asymmetric | <i>Rambo-W</i>            | Chris   |    |          |    |    |
|            |                           | Yes     |    | No       |    |    |
|            |                           | Yes     | S1 | S2       | S3 | S4 |
|            |                           | Ricky   | 3  | 1        | 2  | 4  |
| symmetric  | <i>Chicken</i>            | Chris   |    |          |    |    |
|            |                           | Yes     |    | No       |    |    |
|            |                           | Yes     | S1 | S2       | S3 | S4 |
|            |                           | Ricky   | 3  | 2        | 1  | 4  |
| asymmetric | <i>Rambo-F</i>            | Chris   |    |          |    |    |
|            |                           | Yes     |    | No       |    |    |
|            |                           | Yes     | S1 | S2       | S3 | S4 |
|            |                           | Ricky   | 3  | 1        | 2  | 4  |

**Note:** The four game theoretic models. Ricky is the row player, Chris the column player in each model. The four models are symmetric on top and asymmetric, with Ricky as a Rambo-player, on the bottom. On the left, the cooperative solution (S1) is welfare-optimized compared to all other solutions. On the right, the cooperative solution (S1) is fair, in terms of equal outcomes. The solutions in Nash equilibrium are underlined.

We use four different interest constellations that differ in the preference orders of the two players Ricky and Chris. The matrix-form depictions of these games are presented in figure 6. These constellations have been selected to test two examples of norms which are prominent in the theory of communicative action, as has been argued in the theory section, but are examples nonetheless. In addition to the two norms – welfare- efficiency and fairness – asymmetry has been introduced, and two constellations have been selected that also have the same reasoning as to why the cooperative result is either fair or welfare-efficient. The specific games, *Prisoner's Dilemma* (PD) and

<sup>14</sup> One of the experimental treatments in the pretest was to assess if the amount of money that the participants can receive for each step influences their decisions. No significant influence on the decision could be found between steps of 3, 4, or 5 Euros. Thus, this variable was not included in the analysis, here.

*Chicken* (CH) have been selected, because they deviate from the theoretically predicted Nash-equilibria in these norms. While the No-No outcome in PD is in equilibrium, the cooperative outcome (Yes-Yes) is the Kaldor-Hix-efficient outcome. In CH, if one actor decides to cooperate, the outcome is efficient, but only the cooperative outcome (Yes-Yes) is fair. In the *Rambo-Welfare* game (RW), the Nash equilibrium is at the No-Yes outcome, but the cooperative outcome is more efficient. And in the *Rambo-Fairness* game (RF), of the two efficient outcomes (Yes-Yes and Yes-No) only the cooperative outcome is fair, while the Yes-No outcome is in equilibrium. The dependent variable can only take the value of a cooperative solution if both actors (or in the *Rambo-Welfare* game, the Rambo) decide to deviate from the theoretically predicted choice.

Asymmetry has been introduced in order to have a stronger test of self-interest. When two actors talk about the conflict and decide together, they might realise that their refusal to cooperate might lead to a retaliation of the other actor and, thus, a worse result than could be achieved when cooperating. In the asymmetric games, however, Ricky has the advantage that Chris' choice to retaliate would cost him one step on the preference order, leading to the worst outcome for Chris, while Ricky still receives something. Thus the threat to retaliate is costly for Chris, like in CH, but the risk of defection for Ricky is lower, like in PD.

For randomizing the participant's assignment to the different constellations, we ordered the identification numbers of the observations randomly and followed this order when assigning the participants to their experimental sessions. Due to the nature of the pretest, however, the number of times each constellation was used differ. In the first round of tests in 2011, each constellation was used 6 times each. In the second round, only the *Chicken* and the *Rambo-Welfare* models were used. Each of them 12 times.

## **5.5 Gender as control variable**

Lynn Sanders (1997) claims in her critical examination of the normative aspects of the theory of deliberative democracy that deliberation is a way of political decision making

that is most easily executed by white anglo-saxon males. When attempting to measure the effect of any form of deliberative communication, one has to keep in mind some factors which might influence the results. In the data generation process, the data of several variables has been collected. But due to the restrictions of the small number of observations in this pretest study, the participants' gender appears to be the most important control variable.

The operationalisation of gender is simply asking the participants in the pre-discussion questionnaire, what gender they are. Since the unit of analysis is a complete observation with two participants, the variables are the gender of the Ricky - player, the gender of the Chris- player and their interaction. Values are 0 = female, 1 = male. Participating Rickys were 24 each male or female. The role of Chris is distributed the same way. An overview of the gender distribution among observations is presented in table 1. The role was randomly assigned by tossing a coin.

**Table 1:** Gender Overview

|       |        | Ricky  |      |     |
|-------|--------|--------|------|-----|
|       |        | female | male | Sum |
| Chris | female | 11     | 13   | 24  |
|       | male   | 13     | 11   | 24  |
| Sum   |        | 24     | 24   | 48  |

**Note:** overview of participants' gender in the 48 games. The interaction variable *both male* has thus 37 times the value false and 11 times the value true.

## 6 Results

In this final section, we present the relationship between the topic concurrence and the negotiation outcomes. First, we display tables describing the relationship of topic concurrence, interests, and gender with the three actually occurring outcomes. We then use logit models to assess the correlative effect of these variables on the probability of a cooperative outcome. In the remainder of the chapter we interpret the findings.

## 6.1 Descriptions

Our key interest lies in the question, if topic concurrence affects the negotiation outcomes. Table 2 shows the mean values of the topic concurrence measure over the outcomes. We see that the Yes-Yes outcome (the cooperative solution) is reached with the lowest topic concurrence mean.

**Table 2:** Mean values of topic concurrence over the outcomes

|                   | Yes - Yes      | Yes - No       | No - Yes       | Overall        |
|-------------------|----------------|----------------|----------------|----------------|
| Topic concurrence | 0.89<br>(0.08) | 0.97<br>(0.02) | 0.94<br>(0.04) | 0.91<br>(0.07) |

**Note:** mean values of the topic concurrence measure for the different solutions; standard deviations in parentheses

In table 3, we present an overview of the outcomes dependent on the different game theoretic models. Of the two interest constellations which were only used in the first round of pretests (PD and RF), all outcomes were the cooperative solution. CH and RW see several non-cooperative outcomes. In RW only one half of the observations reaches the cooperative solution.

**Table 3:** Number of outcomes over interest constellations

|                    | Yes - Yes | Yes - No | No - Yes | Sum |
|--------------------|-----------|----------|----------|-----|
| Chicken            | 13        | 1        | 4        | 18  |
| Prisoner's Dilemma | 6         | 0        | 0        | 6   |
| Rambo - Fairness   | 6         | 0        | 0        | 6   |
| Rambo - Welfare    | 9         | 1        | 8        | 18  |
| Sum                | 34        | 2        | 12       | 48  |

**Note:** appearances of the different solutions in the data, itemised by the different game theoretic models

Table 4 presents the number for the different gender constellations. There are non-cooperative solutions in all distributions, but we can observe almost 50% in cases in which a male Chris meets a female Ricky.



**Table 4:** Number of outcomes over gender distribution

|            | Yes - Yes | Yes - No | No - Yes | Sum |
|------------|-----------|----------|----------|-----|
| two women  | 9         | 0        | 2        | 11  |
| male Ricky | 10        | 1        | 2        | 13  |
| male Chris | 7         | 1        | 5        | 13  |
| two men    | 8         | 0        | 3        | 11  |
| Sum        | 34        | 2        | 12       | 48  |

**Note:** appearances of the different solutions in the data, itemised by the different gender distributions

The observations from these tables allow us to suspect that a higher topic concurrence actually leads to fewer cooperative solutions. We also see that one asymmetric game (RW) gives support to the notion that the cooperative solution is less likely in interest constellations in which one actor is advantaged. And there are first indications for a gender effect stating that two women seem to be most cooperative, while a constellation in which the dominant participant is female and the dominated is male reaches the lowest cooperation rate.

## 6.2 The logistic regression model(s)

We present the results of several logit models in table 5 in order to assess if any of the above observations withstands further scrutiny. The striking observation is the significant coefficient of the topic concurrence, while the control variables are not significant. What is even more remarkable is the negative sign of the coefficient. Apparently we must conclude that the higher the topic concurrence, the less likely is a cooperative solution. In addition, we see that we cannot really interpret the role of the interest constellations or the gender distributions, as their coefficients are not significant.

After we have established that there is indeed a relationship between topic concurrence and the negotiation outcome, alas other than expected, we need to clarify how strong this effect is. In the next subsection we present several ways of interpreting the coefficients of the logit model and assessing the substantial effects, before summarising the implications of this effect on the theoretical framework.

**Table 5: Logit Models explaining a cooperative solution**

|   | Model 1                 | Model 2                 | Model 3                 | Model all               |
|---|-------------------------|-------------------------|-------------------------|-------------------------|
| Topic concurrence   | <b>-18.68</b><br>(8.18) | <b>-16.85</b><br>(8.62) | <b>-23.52</b><br>(9.52) | <b>-21.19</b><br>(9.75) |
| <i>Interest Constellations: Reference = Welfare / Symmetric</i> |                         |                         |                         |                         |
| Fair  |                         | -16.85<br>(2498.34)     |                         | -18.20<br>(3944.42)     |
| Asymmetric  |                         | -17.79<br>(2498.34)     |                         | -18.80<br>(3944.42)     |
| Fair : Asymmetric   |                         | 35.56<br>(3596.48)      |                         | 37.82<br>(5749.13)      |
| <i>Gender Distribution: Reference = Two women</i>               |                         |                         |                         |                         |
| Ricky: male   |                         |                         | -0.27<br>(1.10)         | 0.64<br>(1.25)          |
| Chris: male   |                         |                         | -1.97<br>(1.10)         | -1.17<br>(1.39)         |
| Two men   |                         |                         | 1.80<br>(1.51)          | 1.06<br>(1.67)          |
| (Intercept)   | <b>18.18</b><br>(7.68)  | 33.40<br>(2498.35)      | <b>23.46</b><br>(9.05)  | 38.63<br>(3944.43)      |
| n   | 48                      | 48                      | 48                      | 48                      |
| k   | 2                       | 5                       | 5                       | 8                       |
| Null deviance   | 57.95                   | 57.95                   | 57.95                   | 57.95                   |
| Residual deviance   | 50.03                   | 40.14                   | 45.40                   | 36.91                   |
| Difference  | 7.92                    | 17.81                   | 12.55                   | 21.04                   |
| AIC   | 54.03                   | 50.14                   | 55.40                   | 52.91                   |

**Note:** Results of logit regression models using `glm(family=binomial)` from the R-package "stats" (R Core Team 2014) on the negotiated results of a cooperative solution; standard errors in parentheses; N=48; data was produced in Pretests at University of Konstanz in 2011 and 2012; significant coefficients (90% - level) are marked in **bold-script**.

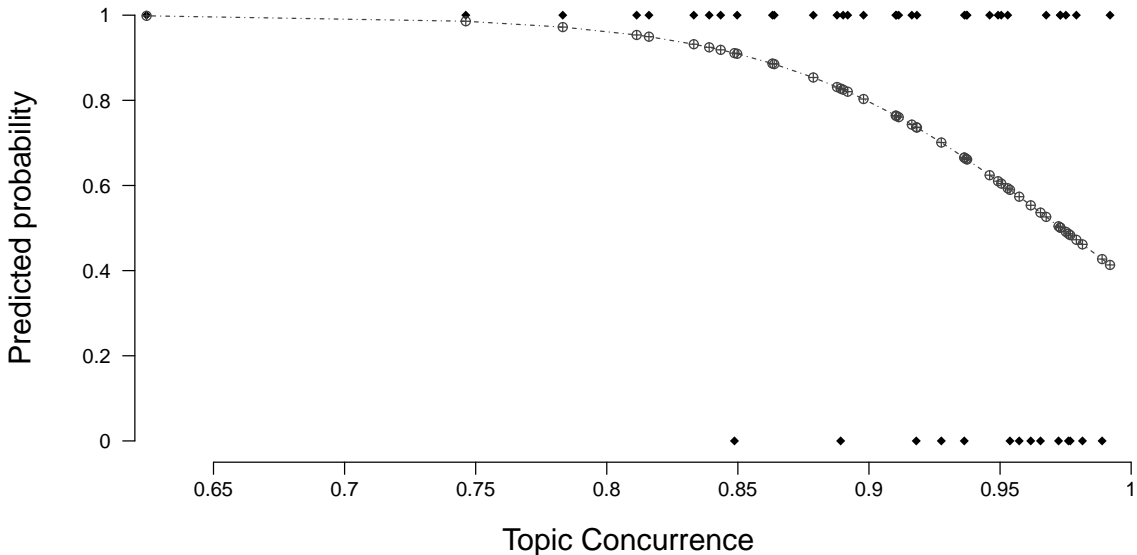
### 6.3 Interpretation of the results

Since the interpretation of coefficients from a logit model is not very intuitive, we will present the odds ratio of topic concurrence, the change of predicted probabilities and the predicted probabilities dependent on the interest constellations and the gender distribution. For calculating the odds ratio, *model all* was recalculated with a transformed

topic concurrence variable: In order to have a meaningful interpretation of a one step increase in topic concurrence this variable was multiplied with 10. The odds ratio is then 0.12. This means that the chance of achieving the cooperative solution is multiplied by 0.12 for every step on the topic concurrence \* 10 scale, which reaches from 6.2 to 9.9. The effect on actual probabilities is however dependent on the starting values and the values of all other variables in the model.

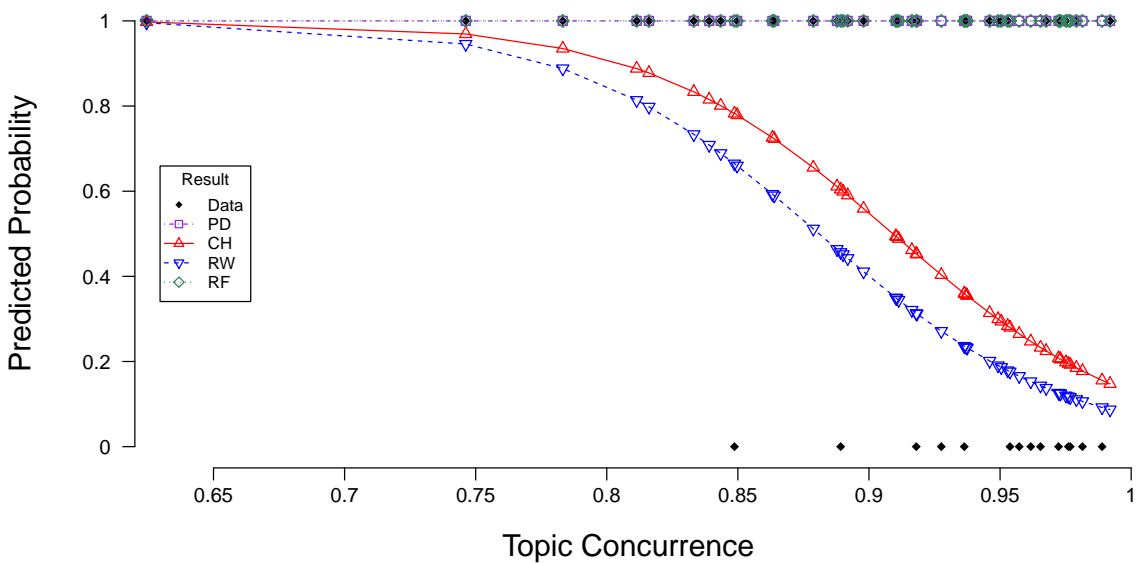
We will therefore continue to assess the change in probability, when moving from the lowest value of topic concurrence to the highest. This can only be done when all other variables stay the same. As references we choose to take those cases in which most variance can be found. In table 3 we observe the greatest variance in outcome in the Rambo-Welfare games. The variables fair, asymmetric and the interaction of the two are thus fixed at 0, 1, and 0 respectively as the reference category. From table 4 we choose the male Chris distribution, the coded variables being fixed at 0, 1, and 0 respectively. We then calculate the difference between the predicted probabilities when topic concurrence is at its minimum ( $p=0.9956$ ) and at its maximum ( $p=0.0869$ ):

$$\Delta p = 0.9087.$$



**Figure 7:** Predicted probabilities using *Model 1* over the range of topic concurrence

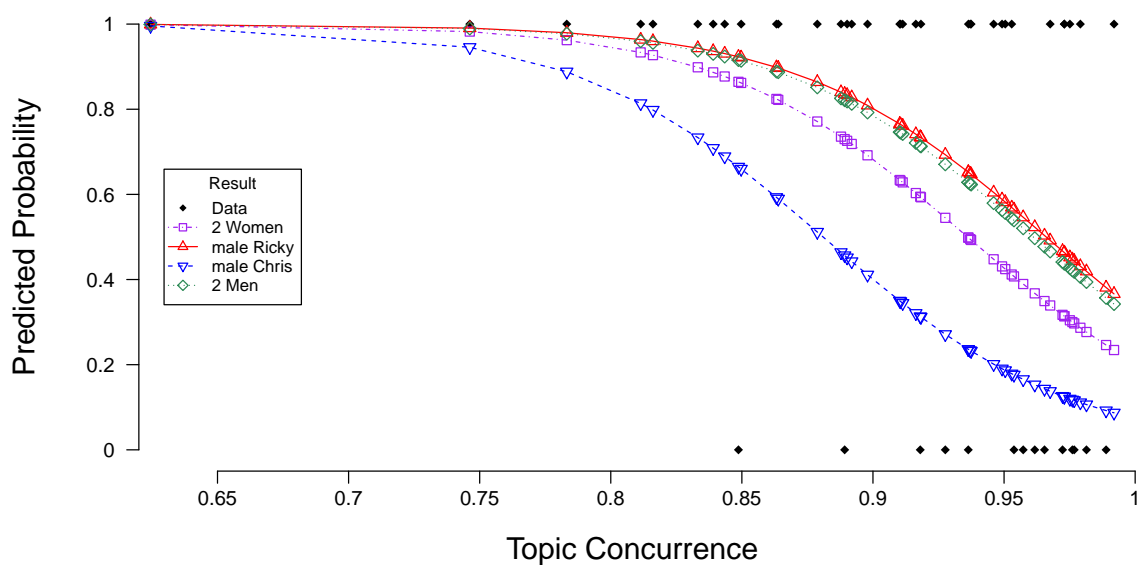
For a graphical overview of the change in predicted probabilities figure 7 depicts *Model 1* for an independent view on the effect of topic concurrence on the probability to reach the cooperative solution. When using *model all*, the predicted probabilities are always dependent on the other values. Thus, the curves of predicted probabilities are presented in reference to the interest constellations in figure 8 and in reference to the gender distribution in figure 9. We can clearly observe the decreasing probability over the range of the topic concurrence value.



**Figure 8:** Predicted probabilities using *Model all* over the range of topic concurrence; different colors and symbols represent the different interest constellations; reference category for gender is *Chris: male*

In addition, the RW interest constellation appears slightly less likely to end in the cooperative solution. Also, the first intuition that two women are most likely to cooperate is not supported by figure 9. Rather two men and a male Ricky – who is in the dominant (Rambo) position – leads to more consensus solutions. The lowest probability for consensus is shown to be the male Chris gender distribution in which a woman is playing the dominant (Rambo) role. These observations should however not be overrated, as the variables are not significant.

Summarizing these results, we can empirically support the idea that negotiation outcomes are affected by the way people communicate, and especially by the level of



**Figure 9:** Predicted probabilities using *Model all* over the range of topic concurrence; different colors and symbols represent the different gender distributions; reference category for interest constellation is *Rambo - Welfare*

topic concurrence between the two actors in our experiments. However, the direction of the relationship is not following the hypothesised intuition, which states that talking about the same topics would increase the probability of cooperation. What does this mean substantially? When two people engage with each other in a discourse to solve a problem where they need to come to a decision, some pairs are more likely to use the same words than others. This was interpreted through our measurement theory as engaging with the negotiation partner and being attentive to their demands and arguments. However, this could also be a sign of conflict – a conflict of interest or one of different interpretations of the situation. In our understanding of deliberation, this would not be a bad sign, because only by debating questionable issues would people in theory be able to produce results that are better than mere compromise. However, in the decision experiments which our dataset is composed of, this level of conflict might already be enough to sway people from being nice and cooperative to being in opposition to the other. With the presented data, a test between those opposing interpretations cannot be made, but it would be fruitful to engage in further investigations along that line.

## 7 Conclusion

This paper attempted to provide empirical evidence for the theory of deliberative democracy by showing that a dialogic negotiation structure is more likely to result in a cooperative outcome than if actors recite monologues of their own positions to each other. 48 laboratory controlled observations of four different conflict scenarios were analysed in respect to the participants' performance of putting forward utterances that are similar to the utterances which their experimental partner is using. This topic concurrence was graphically displayed with topic actor networks and interpreted, before the values were used to predict the outcomes of the negotiations, using logistic regression models.

We found the topic concurrence to be the only significant variable in the model. However, the sign of the coefficient suggests a relationship that contradicts our hypothesised relationship: a high value of topic concurrence decreases the probability of achieving a cooperative solution in a number of 2 people – 2 options strategic decision games. An alternative explanation – the effect of interest constellations – produced no significant results.

In a first attempt to interpret these results, we had to reconsider the conceptual link between deliberation and our topic concurrence measure. We have argued that concurrence of topics could be a sign of a level of conflict that might suffice to have people decide in their own interests. They might deviate from a predisposed norm of cooperation. In addition we have argued that a high topic concurrence reflects a communicative process that approaches the deliberative ideal. However, deliberation is supposed to work because people share information that was not available to everyone before the process. So a certain amount of differing topics might be needed for deliberation to take effect.

By these explanations, we do not intend to save the theory by reinterpreting the variables. Rather, the point is that the conceptualisation of deliberation must be theory driven, and apparently some variables can be interpreted in different ways. It is important to formulate all possible interpretations and maybe think of empirical strate-

gies to decide for one or the other interpretation. This needs to be addressed in future examinations.

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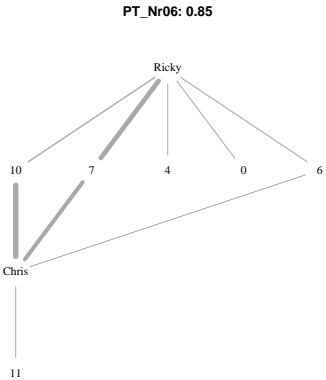
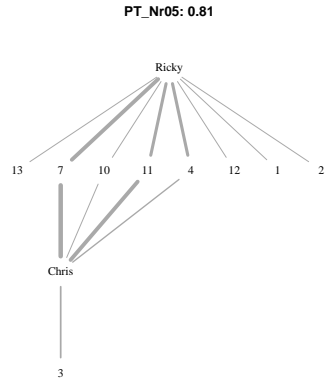
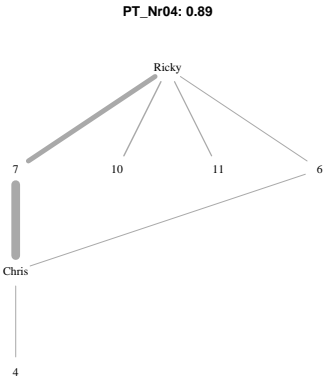
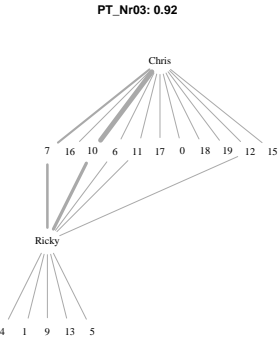
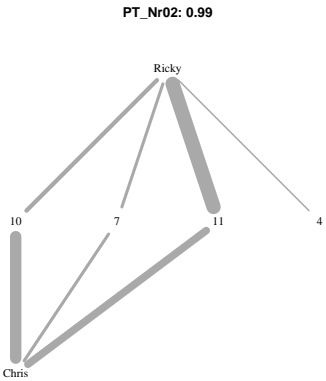
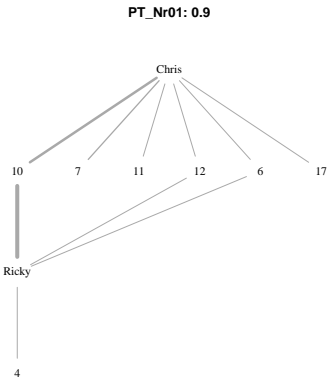


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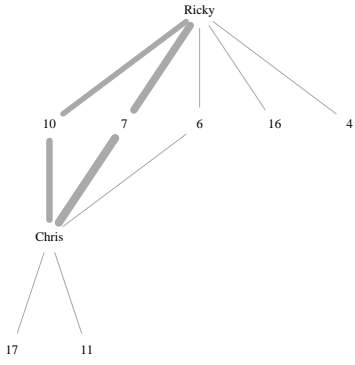
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# Appendix: Overview of the Topic Actor Networks

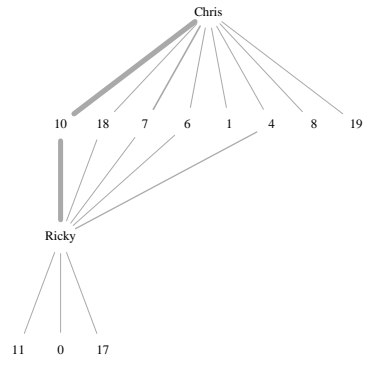
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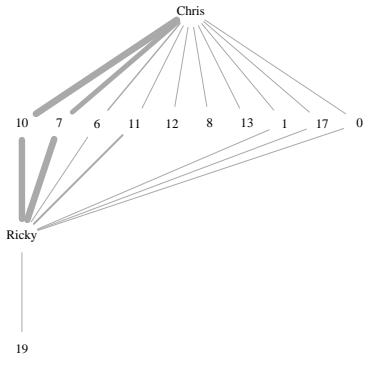
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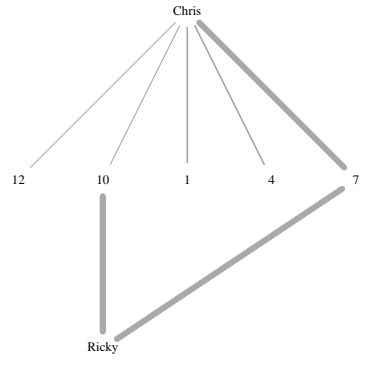
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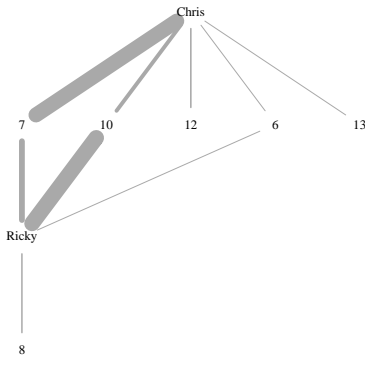
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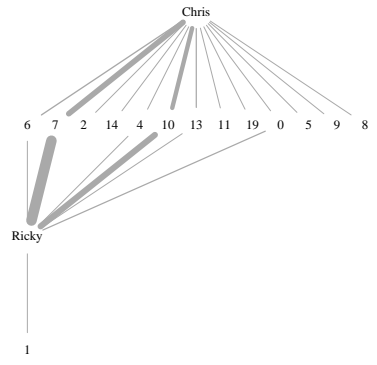
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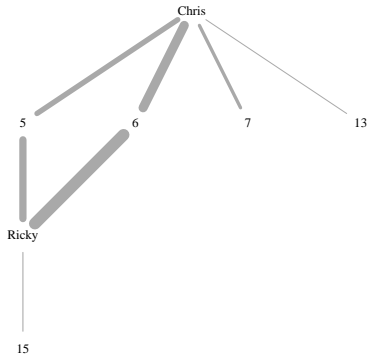


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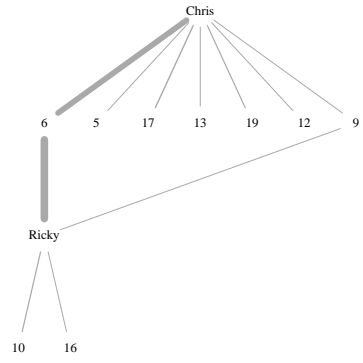


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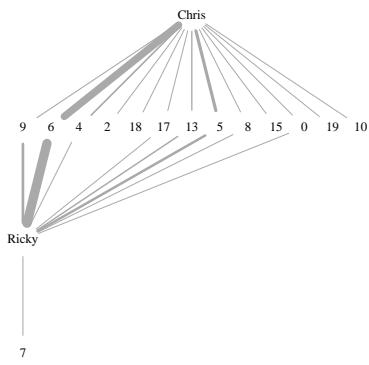
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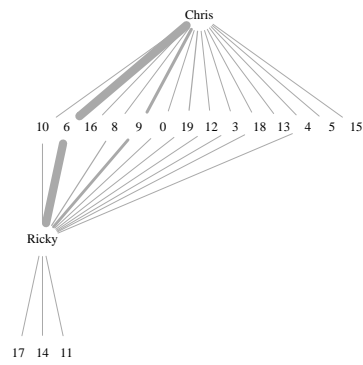
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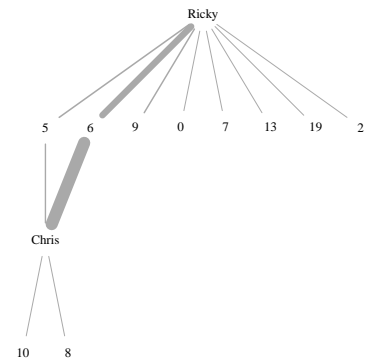
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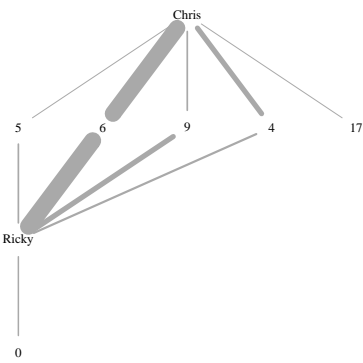
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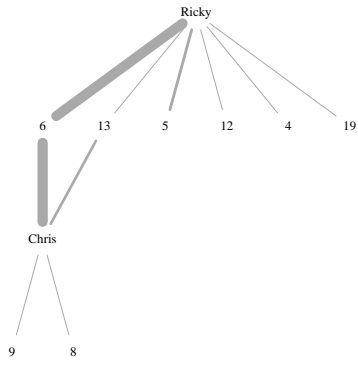
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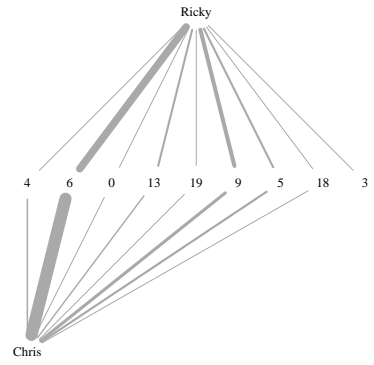
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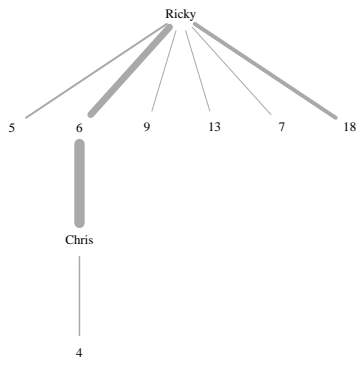
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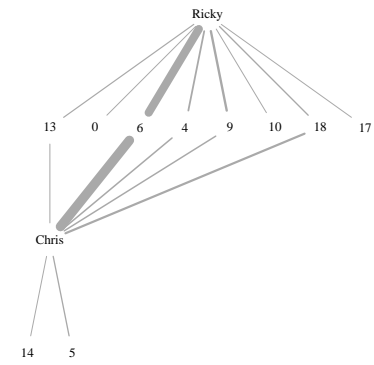
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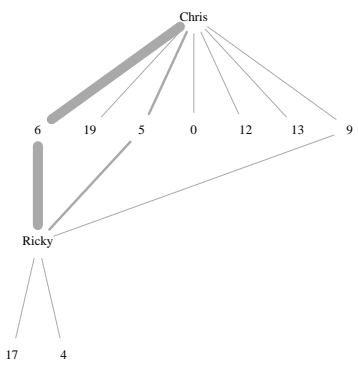
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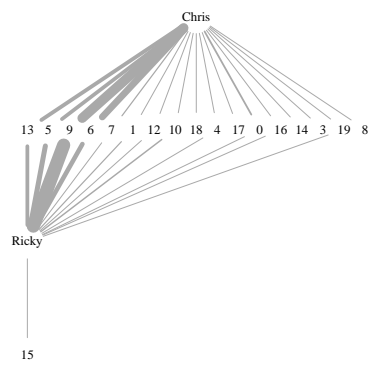
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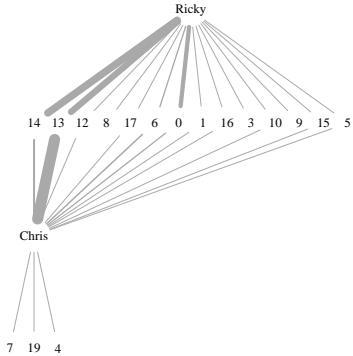


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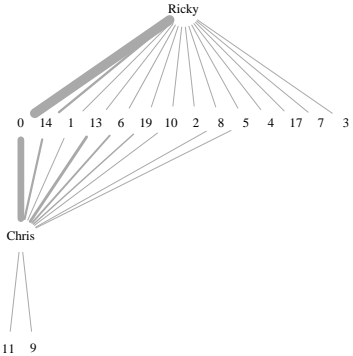


# Coffee shop

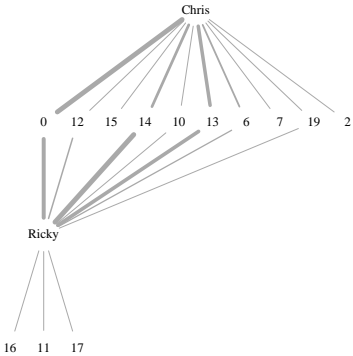
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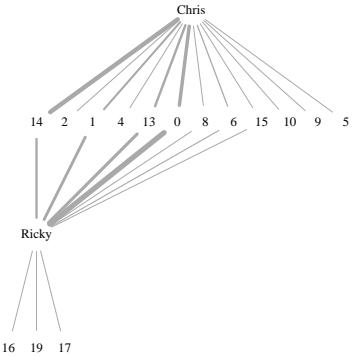
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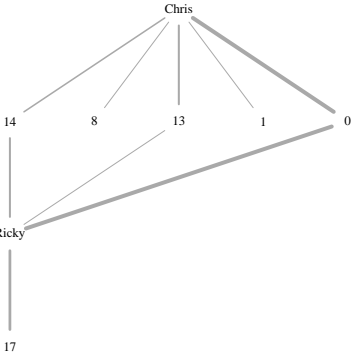
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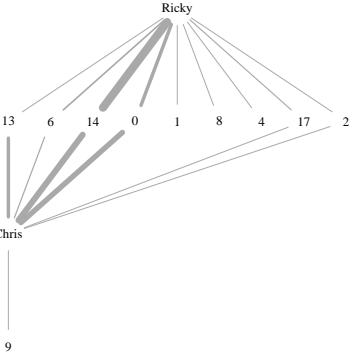
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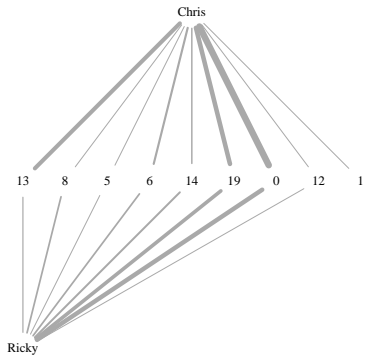
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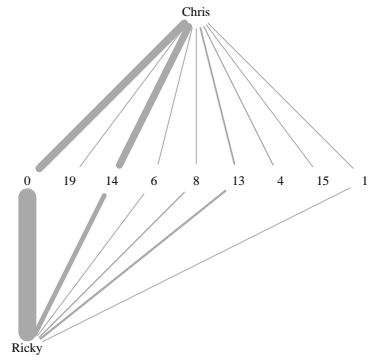
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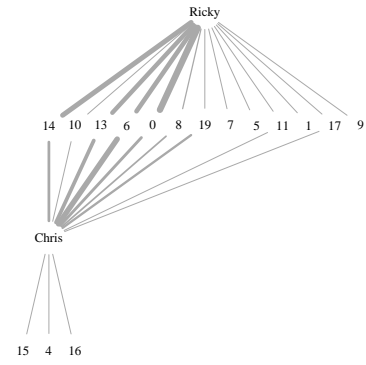
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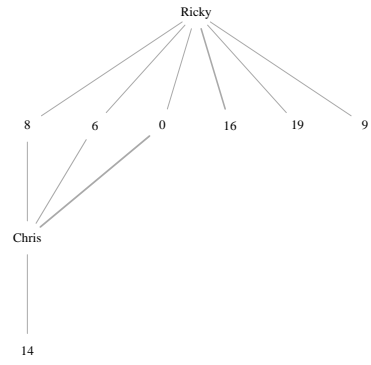
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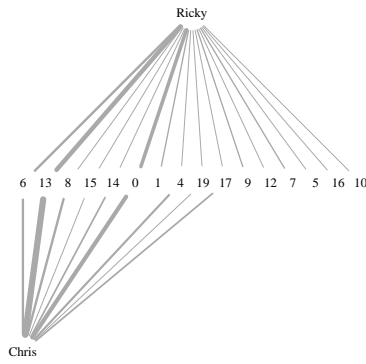
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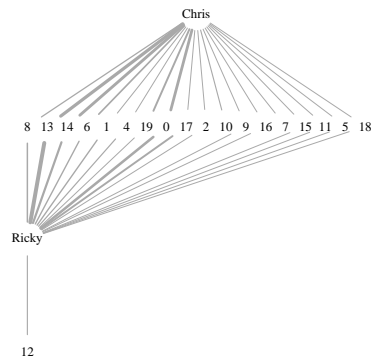
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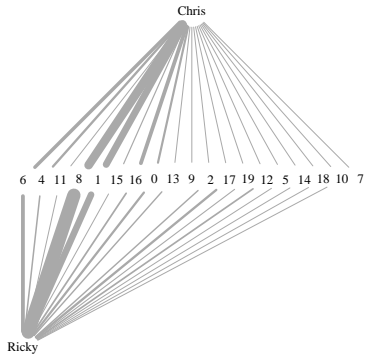
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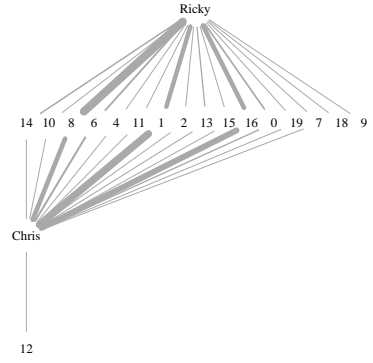


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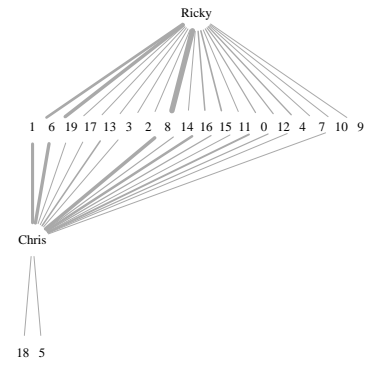
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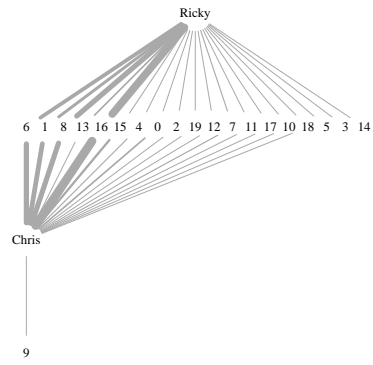
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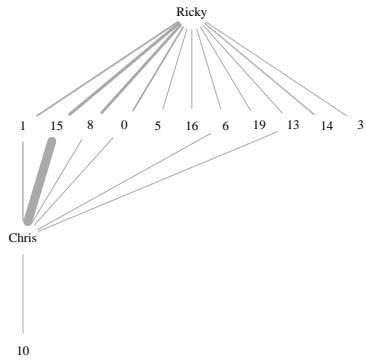
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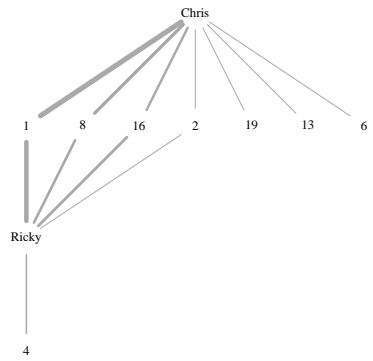
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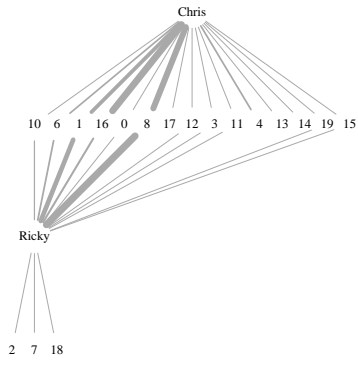
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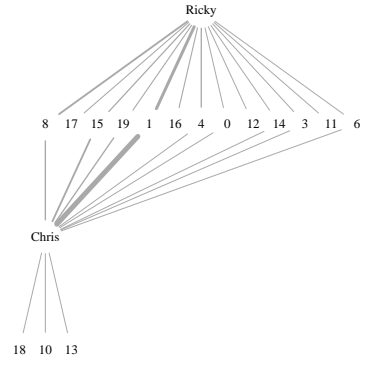
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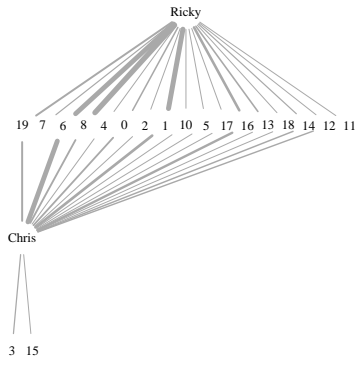
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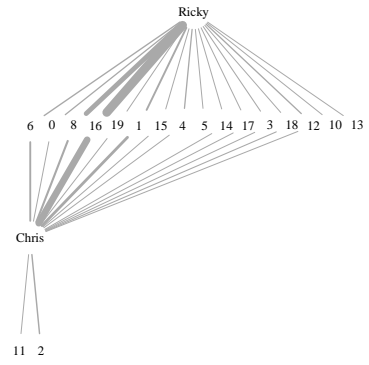
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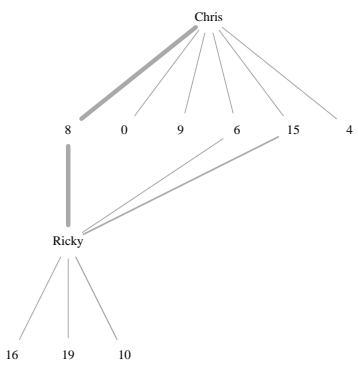
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