Group Decis Negot (2009) 18:235–259
DOI 10.1007/s10726-008-9153-7

Emotion as an Argumentation Engine: Modeling the Role of Emotion in Negotiation

Bilyana Martinovski · Wenji Mao

Published online: 11 January 2009

Abstract The purpose of this paper is to present a model of emotion in negotiation, which reflects the active role emotions play in decision taking as modifiers of theory-of-mind models, goals and strategies. The model is based on empirical studies of human interaction in different activities such as plea bargains, simulated negotiations, doctor patient consultations, and virtual human–human interactions. We use empathy as an example of emotion, which has a natural and powerful function in the shaping and re-contextualization of decision processes. We study also the linguistic realization of emotions as forms of argumentation in authentic discourse.

Keywords Emotion · Negotiation · Argumentation · Group decision · Empathy · Plea bargain · Virtual humans · Artificial social intelligence

1 Introduction

Argumentation is considered a function of rational thought. It is essential in many social contexts where group decision taking and negotiation are important, such as jurisdiction, science, politics, business, medical care, etc. However, following an ancient dichotomy between the emotional and the rational, argumentation models seldom address and involve emotion. The purpose of this paper is to present a model of emotion in negotiation, which reflects the active role emotions play in decision taking as modifiers of theory-of-mind models, goals and strategies. The model is based on empirical studies of human interaction in different activities such as plea bargains, simulated negotiations, and doctor patient consultations. We use empathy as an example of emotion, which has a natural and powerful function in the shaping

B. Martinovski (✉) · W. Mao
University of Southern California, Marina del Rey, CA, USA
e-mail: martinovski@ict.usc.edu

and re-contextualization of decision processes. Furthermore, we study the linguistic realization of different emotions, which function as forms of argumentation.

The paper starts with a review of theories on emotion and argumentation, continues with presentation and operationalization of the process model of emotion in negotiation and ends with an analysis of linguistic manifestations of emotions in a plea bargain negotiation.

2 Background

The study of emotion and argumentation is going through changes. Emotion is becoming more intimately related to cognitive processes such as memory and planning. Argumentation theories thus need an update since they do not study the role of emotion in argumentation. The importance of Theory of Mind reasoning affects our modeling of virtual human cognition but also our understanding of human–human interaction. In this section we explore the existing views on emotion, argumentation and Theory of Mind.

2.1 Theories of Emotion

Three hypothetical descriptions of the relation between emotion and cognition has been discussed through the centuries, which, as Scherer (1993) suggests, could be summarized in the following way:

1. Emotion is a separate system related to two other systems in an organism, namely cognition and will (Plato, Kant, Mendelsohn, Leibniz etc.)
2. Emotion is a grand system, a coordinator of all developing subsystems in an organism (Freud, Descartes)
3. Emotion is one of many components in a complex organism, which are in constant dynamic interaction with each other (Aristotle, Spinoza)

The dichotomy between emotion and cognition as well as this between irrational and rational stems back from Plato's political doctrine in 'The Republic' where he claims that human and political well-being depends on the harmony between three separate units of society and soul: cognition (ruling class/thought, reason, rational judgment), 'thumos' (warrior class/higher ideal emotions) and motivation (lower class/impulses, instincts, low desires). The Aristotelian tradition questioned this dogma by saying that desire can be found even in motivation and in cognition and that there could be many other components in the soul. In the context of Darwinism, emotion has a roll in adaptation in the course of evolution, emotion is universal, expression of emotion is found in other species (Cornelius 2000). In Descartes' era, emotions intertwined with cognition of stimuli. Freudians called for exploration of emotion as a basic condition influencing the conscious and unconscious. William James (Myers 2001) introduced the role of the body in the cause and effect chain: the mind perceives the reaction of the body to stimuli, e.g. increased heartbeat; the sensation of the physiological response is a feeling which mental representation is an emotion, e.g. fear. In appraisal theory, which is a form of cognitivism, emotion is seen as something automatic, non-reflective

and immediate and at the same time, cognition leads emotion, i.e. the way we cognize events influences our emotions related to them, not the opposite. In this sense, emotions become and involve coping strategies (Lazarus 1999). According to the social and anthropological constructivist theory it is the socio-cultural interpretation, which determines emotions and body reactions, e.g. attitudes to language variations such a dialects (Cornelius 2000).

Contemporary neuroscientists report evidence for the involvement of emotion in so called rational cognitive processing. Neuroscientists such as Von Uexkull and Kriszat (1934), Fuster (2003), and Arnold Scheibel (personal communication) observe that evolution gave privilege to the limbic system: emotional feedback is present in lower species, but other cortical cognitive feedback is present only in higher species. In that sense, emotion functions in evolution as a coordinator of other cognitive and non-cognitive functions.

Damasio (1994) suggests that the state of the mind is identical to the state of feeling, which is a reflection of the state of the body. He explores the unusual case of Phineas Gage, a man whose ability to feel emotion was impaired after an accident in which part of his brain was damaged. Damasio finds that, while Gage's intelligence remained intact after the accident, his ability to take rational decisions became severely handicapped because his emotions could no longer be engaged in the process. Based on this case, the neurologist comes to the conclusions that rationality stems from our emotions and that our emotions stem from our bodily senses. Certain body states and postures, e.g. locking of the jaw, would bring about certain feelings, e.g. anger, which in turn will trigger certain thought and interpretations of reality, a thought, traced back to William James.

All approaches to emotion underline the major role emotions play in cognitive processing, yet cognitive models of argumentation and negotiation processes exclude the involvement and the effect of emotions.

2.2 Argumentation Theories and Emotion

Historically, one of the most influential accounts of argumentation is called Toulmin's model (1958), which analyzes six features of an argument: data, claim, warrant, backing, qualifier, rebuttal.

van Eemeren and Grootendorst's argumentation theory (2004), the pragma-dialected approach, is currently most popular. They define argumentation as a verbal, social and rational activity aimed at convincing a reasonable critic of the acceptability of a standpoint by putting forward s constellation of propositions justifying or refuting the proposition expressed in the standpoint.

Walton (1989, 1996) studies negotiation and argumentation by means of informal logic and critical thinking. He offered an account of argument schemes for presumptive reasoning which constitutes the majority of reasoning and argumentation people engage in. Argument schemes are structures or forms of argument, which are normatively binding kinds of reasoning and are best seen as moves, or speech acts in dialogues (Walton 1996).

In legal argument and legal reasoning, case-based and logic-based approaches (e.g. non-monotonic logic) has been applied to study legal argumentation, supplemented with an argument-scheme approach (McCarty 1997; Prakken 2005; Prakken and Sartor 2002). Meanwhile, in artificial intelligence and multi-agent research community, researchers have built computational models for multi-agent negotiation and argumentation-based systems (Carles et al. 1997; Parsons et al. 1998; Kraus 2001; Traum et al. 2003).

With the exception of Walton (1992), these theories did not address the role emotions play in argumentation and negotiation. Gilbert (1995) pointed out that emotional, intuitive (*kisceral*) and physical (*visceral*) arguments ought be considered legitimate and studied just as much as logical arguments. However, neither Walton nor Gilbert has come up with a model of how emotions alter negotiation and decision making process.

2.3 Theory of Mind and Emotion

Cognitive-emotive processes that support group decision-making and negotiation require a capacity for understanding and empathizing with others. This capacity involves the understanding of differing beliefs, intentions, emotional and visceral states, ability to react and to draw necessary inferences, to predict and plan given these concerns. The term Theory of Mind (ToM) refers to the abilities humans and other higher species have to perceive and reason about their own mental/emotional states and the mental/emotional states of other people. ToM processes provide a special kind of context: the minds and emotions of others (Martinovski and Marsella 2003; Givón 2005). In interaction, people learn to act within these contexts. Beliefs about age, gender, language, environment, and so on contribute to the models that individuals form and keep of each other's intentions. ToM explanations have importance for the interactive realization of emotion i.e. the way we understand our own and others' emotions in negotiation.

Three mutually exclusive theories have been suggested to explain how we relate to others: by imitation (e.g. Iacoboni 2005), by simulation (e.g. Gordon 1986; Stich and Nichols 1992) or by representation (e.g. Hobbs and Gordon 2005).

Originally, the main process for establishing and communication of ToM models was and still is thought to be imitation. There is increasing evidence from neurosciences "that the neural mechanisms implementing imitation are also used for other forms of human communication, such as language…Functional similarities between the structure of actions and the structure of language as it unfolds during conversation reinforce this notion ... Additional data suggest also that empathy occurs via the minimal neural architecture for imitation interacting with regions of the brain relevant to emotion. All in all, we come to understand others via imitation, and imitation shares functional mechanisms with language and empathy" (Iacoboni 2005).

According to 'simulation theory', we think of the other's experiences by use of mental and even somatic simulation of e.g. our own experience of the same kind (Gordon 1986). Thus, if someone has a stomachache, instead of imitating his/her experience of a stomachache one can simulate the psycho-somatic processes related to one's own

previous experiences of a stomach ache and that way form an understanding and a reaction to his/her state.

Yet a third idea is that ToM is the application of commonsense inferences about the way people think (Hobbs and Gordon 2005). Here, if someone has a stomachache one can understand her/his state based on ready-made mental representations, which describe what it is to have a stomachache, without going through somatic imitation or mental simulation.

The last two explanations seem mutually dependent. In order to simulate a stomachache one must have some representation of what that is. In order to make inferences about mental representations, one may have to play 'as if' games. Martnovski (2007) has suggested that imitation, simulation and representation are cognitive-emotive processes developed in evolution, all equally available for homo sapiens sapiens.

Researchers have suggested different mechanisms for dealing with ToM's complex processing. Baron-Cohen talks about 'mindreading' or the ability to monitor others' intentions. He goes to an extreme, claiming that successful communication entails a constant feedback-check between communicators to verify whether the listener's interpretation corresponds to the intended interpretation. In discourse analysis, this feedback-checking is reflected in the concepts of grounding and feedback (Allwood 1976). In computer science, the concept of grounding has been used for the design of computational models of dialogue (Traum 1994).

In our model, ToM plays an important role, parallel to emotion, as it enables reasoning about own and others' goals and strategies and changes thereof.

3 Model of Emotion in Negotiation and Decision-Taking

For the purposes of our model we define emotion as recognition of sensory feedback and as coping strategies, which coordinate decision-making not only on personal level but also in interaction. Emotions are not static. They are processes on a neurological, biological and expressive level. One and same stimuli can cause a chain of different physiological reactions, emotional sensations and cognitive appraisals, each of which can influence the other in time. That is, a physiological reaction may bring about an emotion, which can influence cognitive appraisal but this appraisal can in turn bring about coping strategies, which generate other emotions.

The Model of Emotion in Negotiation and Decision-Taking (MEND) developed here suggests a process-based representation of emotion in decision taking and negotiation and offers operationalization of the process components. In this model (see Fig. 1), emotions and ToM beliefs can be instrumental in alteration of goals and strategies in the decision-taking process. Their importance is a derivate not only of visceral reactions but also of planning and ToM processing. Each negotiation situation starts with some set of ToM beliefs and goals associated with Self and Other, which relate to a choice of negotiation strategy and tactics realized in the conversation. The decision making is analyzed into negotiation strategies and transaction and interaction goals. These influence the communication process.

During communication feelings and appraisal of gains and emotion bring about coping strategies. These trigger re-evaluation of ToM models (ToMM), goals, beliefs,

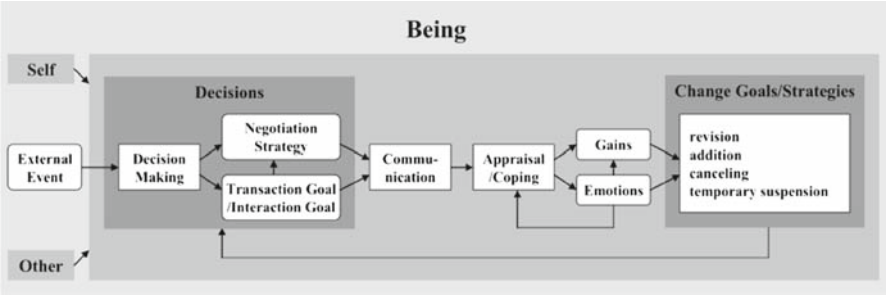

Fig. 1 A model of emotion in negotiation

Table 1 Types of goals: functional, strategic and tactical

Goal type	Value 1	Value 2	Value 3
Functional	Transactional	Interactional	Neither
Tactical	Power	Bonding	Credibility
Strategic	Attack	Consent	Avoid

and strategies, which might be changed. Besides the particular goals, ToMM and beliefs, each negotiation is embedded in a larger existential context, which wraps in all human and other activity. Studies suggest (e.g. Martnovski 2007) that awareness of and reference to co-existence in a larger context facilitate group decision-making and negotiation.

The goals, can be interactional i.e. related to ethics, face saving and transactional i.e. related to issues at stake. The interactional and transactional goals can be subdivided into cooperative (win–win), combative (win–loose) and non-cooperative (loose–loose). The negotiation strategies are designed for accomplishing goals and could be avoidance, demand and consent. The goals are communicated and in the process gains and emotions arise and are appraised, consciously or subconsciously, followed by coping with gains in status and emotions. Coping may result in evaluation of need to change goals and/or negotiation strategies. In the following turn we show how one can distribute goals, tactics and strategies within MEND (see also 4.5.1, Table 1)
Example 0:

A: you have to move the clinic, it is too dangerous here.
The MEND analysis is as follows:

1. interactive goal: show desire to help someone or/and help someone
2. transactive goal: move the clinic
3. tactics: bonding
4. negotiation strategy: direct demand
5. emotion: empathy giving

Each speaker has a particular set of interactive and transactive goals, which might changed during communication. Since the interactive goals often determine the choice of tactics, they are not always stated. In addition, in certain utterances, the transactive goals are more salient (ex. move the clinic), in other's it is the interactive goals, which are more prominent (ex. it is too dangerous here). Thus, in our analysis in Sect. 4.5,

we will not always give both transactive and interactive goals for each utterance for each speaker.

In each interaction, one is dealing with the model of the other's goals one has rather than with the actual goals of the other. This is true not only for the cognitive organization of a virtual human but also for interaction between humans. The communicative exchange and feedback system involved in it serves to resolve mismatches due to this ToM character of communication.

4 Operationalization of the Model of Emotion in Negotiation: Empathy

In this chapter, we will go through the operationalization of the model of emotion in negotiation. Different emotions have different effect on the decision making process. We care for empathy as it stimulates negotiation, as it is of great importance for social harmony (Stephan 1999; Davis 1994), and as it is one of the complex cognitive processes that involve emotion, rational reasoning, understanding, and feeling of the other also on a visceral and somatic level. Similar to other discursive phenomena, empathy realizes under certain conditions and has three main functions in discourse: giving, eliciting, and reception, as well as their negative counterparts, namely, refusal to give and rejection to accept empathy.

4.1 Conditions for Realization of Empathy

Empathy is realized under certain conditions, which involve factors such as power, credibility and bonding. Even in the weakest form of credibility, trust is a necessary condition for empathy. Others' empathy is empowering; this is expressed by the power condition—an aspect of communication, which is not necessarily determined by social status but by general human co-being.

POWER:

1. A has power over B iff A can cause pain or joy to B and A can change B's ToMMs (including goals), location, etc.
2. If A feels empathy for B then B has power over A
3. If A feels empathy for B then A has power over B

CREDIBILITY:

1. A finds B credible iff A beliefs that B says the truth and A beliefs B is competent.
2. If A feels empathy for B then A finds B credible.

CLOSENESS, BONDING:

1. A is close to B iff A shares N values, goals, interest, and/or experiences with B.
2. If A feels empathy for B then A feels close to B.

In the following example, A exercises power over B, displays closeness and credibility to B by expressing empathic feelings on personal matters. By accepting them B allows the exercise of power and closeness and implicitly confirms the credibility of the communicated state of affairs:

A: I am sorry you could not meet your mother before she died.
B: Thank you, dear.

Power, credibility and bonding are disjunctive conditions for empathy but they are also results of realized empathy. By giving and accepting empathy one increases power, credibility and closeness.

4.2 Functions of Empathy in Interaction

Empathy has different functions in discourse. It can be experienced, given, elicited, accepted, rejected, and refused. Having in mind Allwood (1997) conditions for ideal cooperation, namely cognitive and ethical consideration and trust, and the conditions for realization of empathy described below, one may conclude that according to a wider definition, empathy or lack of it may be characteristic of any interactive situation. In the present analysis, one may feel empathy without communicating it intentionally. Lack of empathy does not imply lack of cognitive consideration but it does signal a lower level of cognitive consideration.
EMPATHY:

A feels empathy for B iff A adopts B's ToMM (emotions, goals, feeling, mental states, beliefs) and A feels close to B and/or A finds B credible and/or B allows A to exercise power over B.

Giving (EG): When one feels and appraises empathy for the other that may mean that if the goals were combative, one may re-evaluate to change e.g. permanently or temporarily suspend some or all transactional goals, which are not aligned with the good of the other and change or not some or all interactional goals in such a way that they benefit the other. Empathy giving could be displayed insincerely in case it has a strategic value.
GIVE EMPATHY:

1. A gives empathy to B iff A feels what B feels

   A intends to communicate empathy to B
   and/or A feels close to B and/or A finds B credible and/or
   B has power over A (i.e. B allows A to exercise power over B)

Acceptance (EA): When during communication phase one feels and appraises that one is accepting empathy, one may also go through goal and strategy revision in such a way that they benefit the other.
ACCEPT EMPATHY:

1. B accepts A's empathy iff B believes that A feels empathy for B
2. B allows A to exercise power over B and/or A feels close to B and/or A finds B credible and/or B has power over A (i.e. B allows A to exercise power over B)

Eliciting (EE): When in communication one appraises and feels the need to elicit empathy by the other, if this was not a goal from the start, that means that one changes interactional goals, negotiation strategies and may be even transaction goals in order to receive empathy.

ELICIT EMPATHY:

1. A elicits empathy by B iff A desires B to feel empathy for A
2. A intends to communicate desire for empathy to B and/or A wants to feel close to B and/or A wants to find B credible and/or B has power over A

Rejection when given (ER): When during communication one appraises and feels empathy one may choose to cope with it by rejecting it which ultimately means that one has added a new interactional and may be even new transactional goals and negotiation strategies and that one is going to keep some or all combative goals. Empathy can be rejected for local reasons but the main causes for rejection of empathy in this model are lack of desire to give power to others over ones self, lack of credibility and/or lack of closeness.
REJECT EMPATHY:

1. B rejects empathy given by A iff B does not desire that A feels empathy for B,
2. B intends to communicate rejection of empathy to B, and/or B does not feel close to A and/or B does not find A credible and/or B does not allows A to exercise power over B

Refuse to give (RefE): When during coping one rejects to give empathy, one may go through goal and strategy revision in such a way that they combat the other or may keep goals combative.
REFUSE EMPATHY:

1. A refuses to give empathy to B iff A does not feel empathy for B,
2. A intends to communicate refusal of empathy to B and/or A does not feel close to B and/or A does not find B credible and/or A exercises power over B.

4.3 Levels of Consciousness for Realization of Empathy

Any of emotional process may happen on different levels of consciousness and be realized in interaction on different levels of consciousness: display, signal and indication (Allwood 1996). Signal is a premeditated level of consciousness in interaction, display is involved in interaction on most common daily level of consciousness, and indication is communication on the lowest level of consciousness.
Sender:
DISPLAY EMPATHY:

A intends to and communicates empathy to B.

SIGNAL EMPATHY:

A intends to appear as if A intends to and communicates empathy to B.

INDICATE EMPATHY:

A does not intend to communicate but communicates empathy to B.

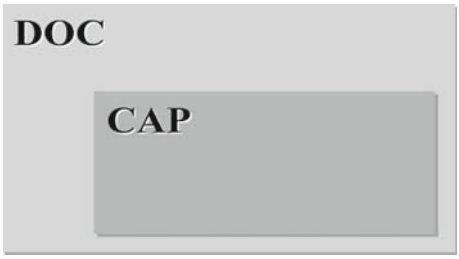

Fig. 2 Virtual doctor's ToM of himself and the human Captain

4.4 Goal Structure

According to MEND emotions can be instrumental in alteration of goals and strategies in the decision-taking process. Here are a few examples of how the model can play out in relation to empathy in an artificial intelligence simulation of a negotiation between a virtual human doctor and a human captain. The scenario originate from a project developed at the Institute for Creative Technologies, University of Southern California (see Traum et al. 2003). We have the following simulated situation: in a stressful war condition, an independent doctor is approached by a military captain who wants the doctor's clinic to move to another place because the military will attack the current location. Here we are modeling the virtual doctor: we have doctor's view of his own goals, beliefs, and wishes (DOC) and Doctor's model of Captain's goals, beliefs and wishes (CAP). In that sense, what is available during decision-making is only the internal 'mental' and 'emotional' process of the modeled agent, including its represented interpretations of the other. The ToM goal model is dynamic i.e. it is generated and created via and during interaction (Fig. 2).

There are different types of goals. We choose to model functional, tactical, and strategic goals (see also Sect. 3 above).

Based on his social role, we may assume that DOC's main goal is to help patients. For that purpose he can stay where he is as his patients are there, he may move elsewhere if this is better for his patients, and he may need provision. He may have independent goals, such as 'stay sovereign' (Fig. 3).

In order to stay DOC must have a goal to not move and in order to be somewhere else he would like to move safely and not far, for the sake of his patients. Initial goals could be 'stay here' and 'get provisions'.

Doctor's Theory of Mind model of Captain's goals CAP can be described as follows:

Doctor assumes that Captain's main goal is to win the war/succeed in mission. Doctor gets to know during negotiation that CAP wants to move clinic and that he wants to win doctor for his mission. Doctor is given a few options: to move to base, to move downtown, and in order to be convinced he may be threatened and or offered something he needs, e.g. provision. Doctor may, in the course of a conversation, activate the belief that Captain shares a goal with him, namely to help patients independently of the outcome of war (Fig. 4).

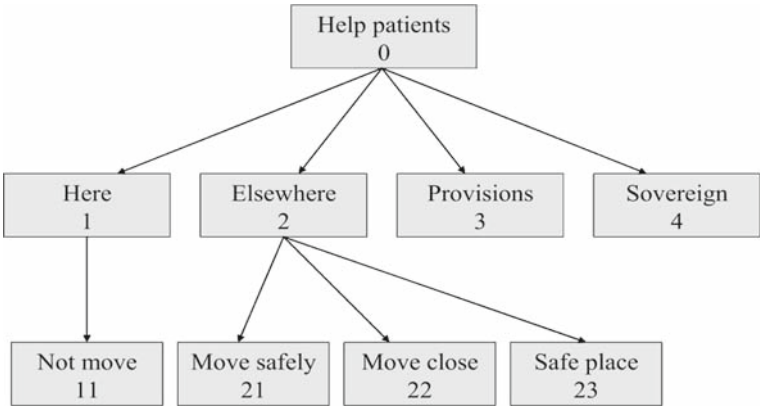

Fig. 3 DOC's goal structure

Fig. 4 Doctor's ToM model of Captain's goals (CAP)

4.5 MEND-Based Analyses of Empathy in Negotiation

How are the emotions and goals realized and changed in the emotion-based model of negotiation? In the next few subsections we will explore these questions by first giving a hypothetical conversation between a virtual human Doctor and a human Captain based on the scenario described earlier. We divide the conversations in sequences of 2 to 4 turns. The sequences in the conversation are established by interactive event such as introduction of empathy move or change of goal or strategy. Then we map the goals, the strategies, the empathy functions and changes of goals used in the conversation on the MEND model and represent the values in tables. In these tables, we observe the changes of goals and decision states according to changes of empathy functions and strategies of interaction.

Table 2 Empathy acceptance, goal and strategy change (Doctor's view of his own goals and actions (DOC); Doctor's ToM model of Captain's goals and actions (CAP'))

Sequence	ToM	Goal	Tactic	Strategy	Gain	Emotion: empathy	Status goal/strategy/ToM	Decision
1	CAP	T0 I 2	Bonding	Direct/avoid	+	EGiving	0	
	DOC	T 0 I 0	Bonding	Direct		EAccept	0	–
2	CAP	T 1 I 3	Bonding	Demand	+	EGiving	Activate 1	–
	DOC	I 1 T 0	Bonding	Avoid		EElicit	Activate 1	
3	CAP	T 2 I 3	Bonding	Consent	–	EGiving	Suspend 1	–
	DOC	I 1 T 0	Credibility	direct	+	ENotAccept	Return to 0	
4	CAP	T 3 I 2	bonding	consent	–	EGiving	activate 3	+
	DOC	I 2 T 2	bonding	consent	+	EAaccept	activate 2	

4.5.1 Empathy Elicitation, Giving and Acceptance

In example 1, we have an exchange of empathy, which triggers reshuffling of goals. During state update (Table 2 next to last column) we may have a change of goals or strategies.
Example 1.

SEQUENCE 1

1. cap: hello doc, this is cap x.
2. doc: hi cap, what brings you here?
3. cap: i want to find out how your clinic is doing (implicit empathy giver)
4. doc: very considerate of you. we are overwhelmed as you can see.

SEQUENCE 2

1. cap: doc, you have to move the clinic. it is too dangerous here. (empathy giver)
2. doc: look at these people this girl lost her mother today (empathy elicitor)

SEQUENCE 3

cap: this is tragic. i understand your pain. is there anything i can help with (empathy giver)

doc: we need a lot of things but the question is are you ready to suspend your merchant mentality and have some empathy for the victims instead (empathy suspended, to be accepted under condition)

SEQUENCE 4

cap: yes sir, i am committed to help you. if you decide not to move, i will still help anyway i can. (empathy giver)
doc: ok, then we can talk. (empathy accepted)

The fictive conversation and its sequences is now mapped into a table analyzing the sequences in relation according to MEND (see Fig. 1), which follows the impact of emotion, in this case empathy, on the changes of ToMMs, goals, strategies, and tactics in relation to final decision.

In the first sequence of example 1, interaction goals are dominant. In Sequence one, the Doctor thinks that Captain is using avoidance because Doctor believes that Captain does not care about patients as much as he cares for succeeding in his mission, whatever that might be and without even knowing what the exact mission is. In Sequence 2, The Doc suspends acceptance of empathy before the Captain can show that he prioritizes goal 3 rather than goal 1 which is his way of negotiating his commitment to further negotiation. Then CAP changes strategy, suspends his demands and moves to negotiation strategy i.e. when DOC changes his ToM model of Captain's goal priorities, then he agrees to enter negotiation. So, we have an example of pre-negotiation before entering the main negotiation. The exchange of empathy elicitation/giving results in change of goal priorities, which is rewarded by empathy acceptance and further negotiation.

4.5.2 Empathy Elicitation, Giving and Rejection

In Example 2, CAP adopts DOC's main goal 0 and suspends his goal 1 to move Doctor however DOC rejects empathy due to lack of trust and lack of desire to give power to CAP to date decisions for him.

Example 2.

SEQUENCE 1

cap: hello doc, this is cap x.
doc: hi cap, what brings you here?
cap: i have orders to move your clinic, sir.
doc: look at these people this girl lost her mother today (empathy elicitor)

SEQUENCE 2

cap: We understand that you are under great stress and we want to help. That is why we need to move your clinic (empathy giver)
doc: I don't need your false empathy and your tyrannical orders. Get out. (empathy rejected)

Table 3 DOC rejects empathy after insincere display of goal adoption

Sequence	ToM	Goal	Tactic	Strategy	Gain	Emotion: empathy (E)	Status goal/strategy/ToM	Decision
1	CAP	T 1	Power	Direct	+		Keep 1	
	DOC	I 0	Bonding	Avoid	–	EElicit	Keep 0 Activate 1	–
2	CAP	T 1	Bonding	Demand	+	EGiving	'adopt DOC 0, Suspend 1'	
	DOC	T 0 1	Credibility Power	Direct	–	EReject	Keep 1	–
3	CAP	I 3	Bonding Credibility	Consent	–	EGiving	'adopt DOC 0, Keep 1	–
	DOC	T 0	Power	Direct	+	EReject	Keep 0 1	

SEQUENCE 3

cap: sir, we really mean to help. If you don't want to move that is fine but we can at least help the patients in some way (empathy giver)
doc: I don't want your sick help. Leave. (empathy rejected)
cap. OK, sir, let me know if you change your mind.

If the Captain can convince the DOC that he really adopted his goals then rejection is still possible but less likely thus, in this interpretation, DOC's ToM model of CAP is that he is not sincere when he displays that he is adopting DOC's goals and experiencing empathy. I display interpretation of insincerity by putting the goal change in quotation marks (Lines 2 and 3 in Table 3).

4.5.3 Empathy Elicitation, No Empathy Giving and Re-Contextualization

In example 3 below, we introduce a new virtual character, a Mediator. The idea comes from an authentic conversation, a plea bargain, in which a prosecutor and a defense lawyer come to a sudden agreement thanks to the mediating involvement of a judge (see Sect. 5.9 below).
Example 3.

SEQUENCE 1

cap: hello doc, this is cap x.
doc: hi cap, what brings you here?
cap: i have orders to move your clinic to the base, sir.
doc: look at these people this girl lost her mother today (empathy elicitor)

SEQUENCE 2

cap: Sir, we need to move the clinic now. If you need transport or supplies, I am ready to provide them.
doc: I am not moving my poor patients. (empathy elicitor)

SEQUENCE 3

(a) cap: Then we have to move you by force.
(b) doc: sure and then I want to see the news around the world: us troops torture wounded children in clinics
(c) cap: or may be 'doctor causes death to his patients by refusing to move clinic'

SEQUENCE 4

(a) mediator: a wind storm is starting, look
(b) doc: this is really bad.
(c) cap: I agree this is bad. (parallel empathy)
(d) mediator: horrible, on top of everything else (parallel empathy)

SEQUENCE 5

Cap: doc, we can provide the clinic with supplies and offer safe transportation (implied empathy)
Doc: ok, but we can not move too far with these sick people (empathy elicitor)
Cap: ok, sir, we will move you closer, what about downtown (implied empathy)
Doc. Ok. Bring the supplies.
Cap. Yes, sir.

CAP' alters goals minimally (lines 1,2, and 3, Table 4) and mediator offers opportunity for re-contextualization (line 4, Table 4), relief and agreement through goal adoption (line 5, Table 4).

4.5.4 Empathy Elicitation, No Empathy Giving and a Stalemate

In this last example we have a case of no response to empathy elicitation and no change of goals.
Example 4.

SEQUENCE 1

cap: hello doc, this is cap x.
doc: hi cap, what brings you here?
cap: i have orders to move your clinic to the base, sir.
doc: look at these people, this girl lost her mother today (empathy elicitor)

SEQUENCE 2

cap: Sir, we need to move the clinic now. If you need transport or supplies, I am ready to provide them.

Table 4 Re-contextualization with parallel empathy causing goal change CAP and DOC conducive to agreement

Sequence	ToM	Goal	Tactic	Strategy	Gain	Emotion: empathy (E)	Status goal/strategy/ToM	Decision
1	CAP	T 1.1	Power	Direct	–		1.1, 2	–
	DOC	T 0	Bonding	Avoid		EElicit	0,1	–
2	CAP	T 1.1,2	Power	Direct	+		Keep 1.1	
							Drop 2	–
	DOC	T 0,1	Power	Direct	+	EElicit	Keep 0 1	
3	CAP	T 1.1	Power	Direct	–	ERefuse	Keep 1.1	
	DOC	I 0	Power	Direct	–		Keep 0 1	
	CAP	I					Move to 0	
	MED	I	Bonding	Consent		EGiving	Activate 2,3	
4		I	Bonding	Consent		EGiving	Adopt	+
	DOC		Bonding	Consent		EGiving	Activate 2,3	
	CAP	T 2,3	Power,	Direct,			Adopt DOC	
	DOC		Bonding	Consent	+	EGiving	0	
5		T 0, 2, 3	Power,	Direct,	+	EElicit	Keep 0,2,3	+
			Bonding	Consent				

Table 5 Stalemate

Sequence	ToM	Goal	Tactic	Strategy	Gain	Emotion: empathy (E)	Status goal/strategy/ToM	Decision
1	CAP	T 1.1	Power	Direct	–		1.1, 2	–
	DOC	T 0	Bonding	Avoid		EElicit	0,1	
2	CAP	T 1.1,2	Power	Direct			Keep 1.1	
							Drop 2	–
	DOC	T0,1	Power	Direct	EElicit			
							Keep 0,1	
3	CAP	T 1.1	Power	Direct	–		Keep 1.1	–
	DOC	I 0	Power	Direct	–		Keep 0, 1	

doc: I am not moving my poor patients. (empathy elicitor)

SEQUENCE 3

cap: Then we have to move you by force. (empathy rejection)
doc: sure and then I want to see the news around the world: 'us troops torture wounded children'
cap: or may be 'doctor causes death to his patients by refusing to move clinic'
doc: get out.

Empathy is elicited but refused which causes a final stalemate (Table 5).

In this process, the conditioning by power, the direct combative strategy realize the refusal of empathy, which results in not flexibility in goal sharing and finally in no decision-taking.

4.6 Summary of MEND

In the MEND model, presented here, emotion is a process, that regulates the Theory of Mind models, which interactants build of each other's goals, states, tactics, and strategies. We elaborated on the effect of empathy in negotiation, which, if offered and accepted, may cause adoption of others' assumed goals or change of own goals and thus enhance decision-making. The traditional idea of win–win, win–lose and lose–lose negotiation types is thus put into perspective where these processes are seen as dynamic re-conditioning of negotiation by changes of ToM models driven by emotions. We showed how the MEND model operationalizes re-contextualization introduced by a third party and how the realization that each negotiation is embedded in a larger context of co-being invites empathy and awareness of common goal/condition. However, the MEND model elaborates on the cognitive–emotive processes which go on during negotiation but does not show the linguistic–pragmatic realization of emotion in negotiation, which is part of what is called 'communication' in the model. In the next section, we move on to a discourse analysis of the linguistic forms and functions of different emotions in negotiation, which aims to complement the MEND model.

5 Linguistic Manifestations of Emotional Strategies: Plea Bargain

Emotion can be used strategically as argumentation in negotiation and it can be manifested in various ways. In this section, we study linguistic manifestations of the use of emotion as argumentation, that contribute to the cognitive appraisal and coping processes, which go parallel with interaction.

We observe the structure of an audio recorded and transcribed plea bargain, which is part of Douglas Maynard's corpus. The setting is as follows: sitting in a room with a judge, we have a defense attorney and a district attorney. The discussion is whether the accused should get jail and for how long or a fine and in that case of what amount. The case involves violence under influence of alcohol and resistance to police officers. The offender is outside the room sitting on a bench visible from the windows. The defense counsel uses emotion as argumentation strategy throughout the entire negotiation. Our purpose is to show the linguistic manifestations of his strategies and how this approach relates to ethics.

5.1 Structure of the Plea Bargain

The plea bargain, although rather informal, has a particular sequential structure. In general, the parties have to agree first that they are willing to settle the case, then to establish the Penal Code provision that applies of the crime and at last, agree on

the settlement value. This particular instance of a negotiation involves sequences and phases of main activities and different kinds of subactivities and topics:

Main activities and sub-activities/topics and their initiators (*sub-activities in italics*; **major negotiation accomplishments in bold**):

1. Brings up Frank Bryan's case—Judge (Jge)
2. *Inserted talk about a different case procedure referring back to a topic discussed before line 1 where the judge brings up Frank Bryan's case—Prosecutor* (*Prs*)
3. Return to the case topic—Jge

   Parties present their interpretation of events Defense offers settlement and reference to Penal code, insists that this is a case of disorderly conduct (CPC: 647f) rather than Arrest Resistance case (CPC: 148).

4. *A meta-comment on the origin of his settlement strategy—Defense (Def) to Jge*
5. **Agrees to settle, suggest a type of crime, 148 rather than 647f—Prs**
6. Discussion on events, type of crime and arrest period—Def and Prs
7. *Didactic instruction—Jge to Prs*
8. Aggressive refusal to involve defendant's prior criminal history - Def
9. *Side talk about rain—Jge*
10. **Plea Bargain Agreement—Prs, Def**

Each one of the phases in the negotiation has particular initiation signals and initiators. The order of the phases provides context and grounding for the rest of the phases, i.e. this sequential order provides the organic structure of the interaction. Phases are defined as larger units of talk distinguished by topic, activity and location in the conversation. Sequences are units of talk, which involve at least an adjacency pair and which build up phases in conversation. They are often used to jointly accomplish a communicative act/project.

There are number of concrete facts, which are considered by the parties in order to apply relevant provisions, establish settlement value, provide substantial justice, and eventually reach a plea bargain agreement:

1. Did the defendant resist arrest?—yes / no
2. Did the defendant strike an officer?—yes / no
3. Did the defendant cause disorder?—yes / no
4. Did the defendant spent time in jail already?—yes / no / how long
5. Does the defendant have prior convictions?—yes / no / what kind

The defense counsel's arguments mitigate each stance based on the above questions:

Defendant did not resist arrest other than verbally and if he did it just looked like resistance but it was not because he was drunk;
Defendant's character when not drunk is a very peaceful and sweet;
there is no evidence that he stroke an officer;
Defendant caused disorder but it is a minor family thing thus trivial, in fact he was probably even justifiably angry since 'what kind of mom calls the police on her son';
item Defendant was drunk and if he was not he would not do what he did;
Defendant is black and if he was not it is less likely someone would call the police, even his mother.

Prosecutor's arguments refer to police report and legal provisions texts:

Defendant resisted arrest but not only verbally: he tried to escape;
There is not evidence he stroke an offices but the report is not full;
Defendant caused serious disorder to this extent that his own mother called the police, which points to 647f provision related to disorder conduct;
Defendant has spent time in jail justly since he did resist arrest although not clear for how long;
Defendant has prior convictions related to disorder conduct and violent resistance to arrest, including striking an officer, thus the most relevant and urgent provision is CPC: 148, which provides jail in order to reach substantial justice.

5.2 Entertainment

The Defense attorney (Def) initiates one side talk as a form of entertainment and a show (italized) of his experience and friendship with famous and successful lawyers. The conversation is transcribed according to Conversation analysis standards ([ ] denotes overlap, = denotes latching, _ denotes emphasis, Jge denotes Judge, Def denotes Defense counsel, Prs denotes Prosecutor).

Prs: well I'd li[ke to settle (it)
Jge: [*Yo(h)u ha(h) lwa(h) ays s(h)ay tha(h)a(h)at* [i h h][*ihh*][*h u h*][*h u h*]
Def: *[Well as- I][I lea][rned that (t][rade) from Harr]y Moberg,*
Jge: *uhh[hOh:] hah [hah][h a h h h] ()=*
Def: *[uh:] [bee][cuz with Harry], (0.2) > you =*
Jge: =[((thrt clr))]
Def: =[start talkin'] to each other through clenched< teeth. [And after about] five] minutes of (.) challenging each=
Jge: [ah hih! hihhih] ()]
Def: =other to go [to trial, and I know 'at 'e doesn't try any= [((sound of small item dropped on table))
Def: =ca(h) ses see(h) ee, [hh o(h) nly r(h)eason's I g(h) otta go to=
Jge: [()
Def: =trial a[gainst one'a his new kids, r(h) ight?=
Jge: [hhh
Jge: =Huh!=
Def: =˙ hh Or [(hi)his (n- old pro like) mister Franklin, ˙hhh =
(): [()
Def: =And so I finally tried to get the conversation around t(h)a what we were talkin' about. like sett' lin' the ca(h) ase ˙hhh It ˆworks.<Harry and I cuddo a lot of business that wa(h) ayhh [wu-
Jge: [(hih) hih huh huh ˙hh =
Prs: = Uh- (0.2) I- I think it's a case that oughta be i- uh settled. It's a=
Def: =Okay.=

In this embedded sequence, the Def manages to entertain both the Judge, who often laughs, and his opponent with a sub-narrative. He also points out that he behaves

within a context and with a strategy, that he is playing a role as prescribed by the best in his business. The linguistic strategies he uses to accomplish emotional experience such as entertainment are:

Narrative
Slang imitation
Lexical choices ('new kid', 'old pro', 'that trade')
Tone of voice

5.3 Empathy Evocation

Number of the defense' arguments build on and aim to evoke empathy: being black is a disadvantage therefore an excuse; being drunk provides an excuse too, as well as having one's 'mom' call the 'cops'.

Def: [Well. lemme ask 'im. I assume 'is mumma bailed 'im out after she called the c(h)ops on 'i(h)m f(h)in' ou(h)t what [(i'was) all ab(h)out.]

Empathy evocation is signaled by number of linguistic devices, such as tone of voice, lexical choices (mom, cops, reminds of adolescent speech style thus pointing to the person's immaturity, reaches to personal association with own family history), gesture etc.

5.4 Aggression

The entertaining and ridiculing style is interchanged with demonstrations of helpfulness and claimed agreeability, which later develop into aggression and disgust (italized). The reaction of the Prs is again self-explanation presented in an even weaker manner as he stutters and has a problem formulating a sentence. The Def continues his ridicule by use of mocking back-channels, initial interruptions, latching, ridiculing mocking repetitions, etc. In this manner, the Def gains a dominant emotional role in the conversation, wins the floor and presents his personal hypothetical interpretations as arguments.

Prs: He has ub a: one prior. (0.3) conviction in this jurisdiction with thee uhm (0.8) sheriff's office, of of interestinly enough. u:v striking a public officer and of disturbing peace.
Def: *Will you knock it off. ((disgusted tone)) (0.5) You wanna make a federal case out of this?*
Prs: N:o, [I I just] think [that that i]t's it's not uh this uh=
Def: *[h h h] [h h m]*
Prs: =happy go lucky chap's uh first (1.0) encounter with uh um (1.8)
Def: [Statistic]ly if ya got black skin:. you ar (0.2) you ar (.)=
Prs: [()]
Def: =hhighly likely to contact the police. I think
uh:substantially more likely than if you're white.<*Now come on.*<*Whadda want from 'im. (0.6) He's got a prior.* (1.8)

Jge: Well we know he spent ten ho:urs, ehhem (1.0) end
uh:: [we know he's been down here fer] mo:re
Def: *[(He) o: n l y s p e n t ten] ((mock shock)) (0.8)*
(): *((throat clear))*=

Emotionally loaded imperative expressions such as 'knock it off', 'come on' and throat clearing act as more powerful persuasion devices than the arguments which by themselves are inferential and unmotivated.

Tone of voice
Sentence modality
Turn taking—interruption, latching
Lexical expressions
Sequential timing of aggression

5.5 Ridicule, Sarcasm

As the prosecutor has agreed to settle he proposes a settlement value. He is joining the Def in his playful colloquial style of speech, which is evident in lexical choices such as 'dandy', 'wanna', 'probably'. Def objects to the suggestion starting with an interruption and an initial 'wull' discourse particle. Def has no good argument other than reasoning based on his personal hypothetical interpretation of events. Def interrupts again this time the very beginning of the Pros attempt to take the floor and present his own objection. Def objection is again underlying his personal view in a categorical manner, which involves even sounds such as garbling, signaling ridicule or his personal view of discontent. In response to the Pros is defensive and presents an explanation of his initial settlement suggestion which more or less cancels it and expresses his own uncertainty. When he tries to present his view of the situation, starting with a theory-of-mind expression such as 'I think" the Pros is again interrupted by the Def. This time the Def continues the ridiculing strategy vocalizing a mocking reaction (*italized*) of surprise with a single discourse particle or exclamation 'oh'.

Prs: =Strikes me as a dandy one forty eight uh- (1.0) >probably better one fortyeight than a six fortyseven ef< if you wanna be very stric[t about it.
Def: [Wull I- thu- I see it as a six forty seven ef.
uh: 'e didn' lay hands on any officers, ·hh if he ' adn't been so á1drunk I assume nothing none' uh this woulda ha: ppened. ·hh[h
Prs: [W[ell I-
Def: [I don't think it's worth any jail time no matter what it is. (("no" is garbled))
Prs: I was being academic when I said that. [I] uh: I I think=
Def: *[Oh,]*

Having put the Pros in a discursive corner, made him abandon his own judgements and after vocalizing ridicule of the Prs the Def suggests his own version os a settlement value which is of completely different kind, not jail but a very low fine. He does that by following the entertainment line of argument, where he invents a new word and then playfully offers a mocking apology. In that sense, he combines entertainment and

ridicule of the pros by playfully and subtly suggesting that he is too narrow-minded and works only with aid of books, laws and dictionaries.

Repetitions
Turn-taking—interruption, latching
Rhetorical questions
Throat clearing
Tone of voice

5.6 Apology

Playfully sweet and charmingly apologetic (*italized*), Def is playing with words ('justicy', justiciabe') used earlier by the Prs thus diminishing his importance and in effect mitigating the effect of his claims for justice.

Def: *[Okay, uh: twenny fi dollar fine?<does that so: und [justicy?][justici]able?*
Prs: [W e: ll,][u m :]
Prs: Um: (0.4) i- hh (0.4)[()
Def: [>*I made it up.[I'm sor]ry.I didn't*=
Prs: [Yih got-]
Def: =*look at the diction-I made up a [w o rd.<]*

This apology is just another form of ridiculing and follows the argumentation line directed towards the judge, namely the line of entertainment.

5.7 Flattery

By emphasizing his own professionalism (see Sect. 5.2 above) Def is also using professionalism as a compliment to his opponents.

Def: [He doe:]s (.) take a menacing sta:nce, ˙hh but on the other hand he doesn't attempt ta strike an officer.<I assume that the officer's highl- high- degree of prufessionalism: pruvents my client from getting himself into further tr(h) ouble. ˙hhh[hh

Flattery is a well-known communicative emotion elicitor, presented here in a more serious and structured language, in difference from other moments of entertainment, sprinkled with casual colloquial mannerisms.

5.8 Agreeable and Helpfulness

The Def presents himself as helpful when the Prs lacks information on important issue such as how long the defendant spent in jail already. In parallel with the entertainment and ridicule, Def presents also to the himself to the judge as an agreeable negotiator who does what the Pros wants. This agreeable persona is expressed with a reference to the personal name of the Prs who was just made fun of and put in a corner.

Def: Well what are you asking for.<>Lemme I mean I always usually go along with whatever Jerry says.<

This helpfulness is again dominated by the playful entertaining tone, which mitigates the seriousness of the offense and thus works towards minimal judgment. The contrast between this emotion and the aggression and ridicule expressed earlier illuminates the manipulative character of the expressed emotion.

5.9 Re-Contextualization or Agreement in a Parallel World

In Sect. 4.5.3 above we discussed a situation in which a third party offers resolution to a negotiation by re-contextualization. The source of this strategy comes from the pea bargain extract in this section. The negotiation goes through number of stages, which are driven by dynamic re-contexualizing of the other's mind: as the defense attorney presents his client as 'a good guy in trouble', the prosecutor refers to previous record; as the previous record is mentioned, the defense counsel ridicules the idea of a jury trial for 'such as small thing', etc. After a few cycles of strategically emotionally loaded interactive duel the parties end in silence with no resolution. At this point the judge says:

Jge: *Do I hear it raining again? Is it [()]*
Def:: *[Oh my] god. (1.2)*
(D): *h[h*
Jge: *[I think that's rain [isn' it?*
Def: *[It only does it for spite. (0.5)*
Prs: *I think it is too.=*
Def: *=The suit's made of sugar.<It melt[s.*
Prs: *[() out of (.) of (0.7) top on it. It's a firebird. It's a- (0.5) ((clicking sound: chair?)) ().*
(): *((audible breathing))*
(J): *hhh*
Prs: Is a seventy ˆfive dollar (fine)?
Jge: Hh Heh huh. ˙hh-
Def: Why don't we compromise and make it fifty.
Prs: That's done.
Def: Ar[ri(h) ght.]

This sudden interruption brings an unexpected reframing of the situation outside of the judicial and personal/emotive context. Instead of directing attention to the other's mind as a context, the participants are asked to shift mental attention to a larger context, in which they are all embedded (see also 4.5.3 and 4.6 above). This shift brings relief and almost immediate re-interpretation of personal and professional goals and contexts, which ends in a sense of a collaborative win-win resolution.

6 Summary

Emotion is a complex phenomenon with cognitive and behavioral aspects and manifestations. In this paper, we studied the role of emotion in negotiation and demonstrated in different ways how emotion can be an engine of argumentation, driving the wagons of

rational thought. Specific linguistic manifestations of emotional dominance (flattery, sarcasm, ridicule, aggression etc.) function as strategic means for negotiation with different levels of awareness—from lexical choices to tones of voice and paralinguistic expressions. Based on such observations, the paper presents a model of dynamic re-interpretation and re-contextualization of negotiation, MEND (Modeling Emotion in Negotiation and Decision-making), according to which emotions contribute to the changes of goals and strategies during negotiation. The purpose of the model is to aid understanding of the role of emotion in negotiation but also to assist artificial intelligence models of negotiation. The operationalization of the model relates adjacent turns and utterances to updates of Theory of Mind strategies, transactive and interactive goals, tactics, and interpretations of emotion, either on primary or on appraisal and coping level. A typical example of an emotion, which requires adoption of other's goals is empathy. Following the empiria, the model suggests, that explicit shifting of attention from contexts of other's minds to larger inclusive contexts offers relief in face-to-face negotiation, which brings out collaborative re-interpretations of the situation at hand.

Acknowledgements We are grateful to Douglas Maynard and John Heritage for kindly providing us with exciting plea bargain data and to Stacy Marsella and David Traum for useful discussions.

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