# Mediated Multilingual Interactions.

# Suggestions for a game theoretic framework[1]

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*Abstract*

*This paper aims to briefly describe the basic methodology of the economic model Game Theory and suggest how it can be used as a framework for analysing mediated and non-mediated multilingual intercultural encounters. It suggests that a game theoretic framework can be adopted to view, rationalize and understand the (seemingly) rational choices speakers make vis-à-vis their interlocutors in a multilingual intercultural situation. A game theoretic framework can shed light on the choices speakers make. These choices are inevitably built on and constructed through precepts and assumptions but also expectations regarding the interlocutors' pragmatic and linguacultural discourse patterns. Choices will depend on the information (or lack of it) that is available to speakers regarding the immediate situation and regarding the interlocutor's knowledge and expectations. The paper focuses on issues such as mutual (non)-comprehension, intercultural dimensions, accommodation, power-negotiation and facework when used in intercultural communication. It suggests that Game Theory can provide an additional terminological and conceptual framework to evaluate and analyse interlocutors' behaviour, expectations, decisions and desired outcomes, providing opportunities to better understand the underlying behavioural and decision-making dynamics in multilingual communication.*

*Keywords:* Game Theor*y;* decision-making; multilingual communication; translating/interpreting; accommodation

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[1] The ideas contained in this paper were first presented in 2005 at the *FIT 2005 World Congress in Tampere* in the paper "Dead Serious Games. Community interpreting analysed in a game-theoretical perspective" and subsequently at three other conferences. "The 'I-Centered' model as a game-theoretical framework for analysing conflict in legal interpreting" in 2012 at the *TISP conference on Public Service Interpreting and Translation* at the University of Alcalà, with a former student Francesco Marani; again at the University of Alcalà in 2014 at the *5th International Conference on Public Service Interpreting and Translation: Re (visiting) ETHICS and Ideology in situations of conflict* in the presentation "Community Interpreting and Game Theory"; and as a poster "Dead Serious Games. Community interpreting analyzed in a game theoretical perspective" at the *CL8 Critical LinkS / A New Generation* at Heriot Watt University in 2016.

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# 1. The applicability of Game Theory to multilingual communication. From economic theory to Translation Studies and beyond

This paper aims to briefly describe the basic methodology of the economic model Game Theory[2] (henceforth GT) and suggest how it can be used as a framework for analysing mediated and non-mediated multilingual intercultural encounters[3]. It suggests that GT can be a useful analytical framework through which to view, rationalize and understand the choices we make vis-à-vis our interlocutors in a multilingual and intercultural communicative situation, helping us understand better how those choices are based on prior precepts and-seemingly-rational assumptions, and how they work reciprocally with the interlocutor's assumptions to form decisions and actions[4]. GT provides us with an additional terminological and conceptual framework to evaluate decisions, outcomes and goals, as well as risks. A better understanding of these mechanisms could also help anticipate mis-communication in multilingual situations. The examples in the appendix provide simple applications of GT to everyday situations that could be helpful to better understand the complex dynamic of GT[5].

In a game theoretic framework, the communication event is imagined as a 'game' where interlocutors are mutually evaluating each other's strategies. It could be described as a Utilitarian approach to decision-making, philosophically speaking, where the preferences and outcomes ("utility and payoffs") are measured numerically and decisions are taken on the basis of what those measurements suggest as being quantitively optimal. Through GT, the concept 'zero-sum game' has become widespread in describing a situation in which participants benefit (or do not benefit) from a given situation. GT has been adopted both descriptively and predictively in a vast range of applications by quantifying probable outcomes and making predictions.

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[2] As distinct from 'games theory' or 'gaming'.

[3] A word of caution is necessary here: A game theoretic analysis of complex human behaviour is not without limitations because the data available to the researcher is limited and a researcher's interpretation of human behaviour and decision-making strategies will necessarily be flawed precisely because it is limited and subjective. Although culture-governed human communication strategies are often described through intercultural models, these should be adopted with caution in order to avoid over-generalizations and an essentialist (non-relativized) perspective. Furthermore, any description, let alone prediction, of human behaviour is susceptible to random variables and to individual idiosyncratic actions and decisions; although economic game theoretic models factor in random variables and individual behaviour, quantifying and modelling human behaviour in this way could become execessively complex. By 'mediated' interaction I mean by an interpreter, translator or, as is more common is some countries, a language or cultural mediator.

[4] Boileau 2015:72. He provides a GT framework through which to analyze divorce mediation.

[5] The simple examples include a one- and multiparty game, symmetrical and non-symmetrical preferences, the prisoner's dilemma, and coordination.

Although decision-theories had been studied in many disciplines (see Benz et al. 2006), it was John von Neumann's early (1928) publications on games and risk that developed into what became known as GT when, with, Oskar Morgenstern, they published their seminal studies on 'games' in 1944 in an attempt to find a more effective way to solve certain kinds of economic problems regarding competition between firms, investment and numerous other issues related to economic activity[6]. Since then, GT has been applied to a vast range of settings and disciplines, such as diplomacy and military strategy, political campaigning, elections, juror selection and even to the evolution of the human race and its language development[7]. In the area of language studies, GT has been applied to communication[8], pragmatics (especially the Gricean cooperative principle and the notion of implicature) and semantics in a number of sophisticated technical studies[9].

As early as 1967 Jirij Levý offered an analysis of how GT could be used to examine translation as a cognitive decision-making process (see Osimo 2014 and Baker-Malmkjaer 1998). In this essay, contained in the festschrift in honour of Roman Jakobsen, Levý suggests that translation strategies and choices can be seen as a series of decisions where "Each choice, and each decision deriving from it, give birth to a different "game", which in translation is called "version""; the translation process is a "succession of definitional instructions and selective instructions" to choose among the possible options (in a paradigm) in the semiotic decision-making process (Osimo 2014 citing Levý 1967). Levý's analysis was in essence a 'one-person' game in GT, examining the translator's decision-making process from a cognitive point of view. Hsieh, in a 2015 paper calls upon translation studies researchers to analyse translation through economic models,

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[6] See e.g. Davis 1997; Gintis 2009; Myerson 1991; Osborne 2004. A simple google search will instantly reveal the popularity and continued relevance of GT across disciplines.

[7] For a non-technical introduction and mention of various fields of application see Davis 1997, but the list of GT studies is truly applications is vast; Benz, Jäger, and van Rooij 2006 is a good place to start, but also Gintis 2009; Myerson 1991; Osborne 2004; see e.g. Ross 2016 for a description of GT and philosophy. For GT and evolution see Maynard Smith 1982; Maynard Smith and Price 1973; Skyrms 2010.

[8] Allott 2006; Demichelis and Weibull 2008; Zapater 1997.

[9] The literature is ample in this field; for example: Ahern and Clarke 2014; Asher et al. 2001; Atlas and Levinson; Benz et al. 2006; Clarke 2012; Clarke and Parikh 2007; Franke 2011, 2014, 2016; Franke and Goodman 2012; Franke and Wagner 2014; Franke and Jäger 2014; Grosz 2014; Jäger 2008, 2012; Jäger and van Rooij 2012; Kamp 1978; Merin 1999; Pietarinen 2006, 2007; Parikh 2007, 2010; Rubenstein 2000; van Rooij and Sevenster 2006; van Rooij 2004; Merin 1999; Rubinstein 2000; Franke, de Jager, & van Rooij, 2012; de Jaegher & van Rooij, 2014; Wagner, 2015. Unsurprisingly, the connection between Sperber and Wilson's (1995, 2004) relevance theory and pragmatics in a GT perspective has also been studied; see Franke, de Jager and van Rooij 2012. There are of course numerous other models describing negotiation and decision-making, most famously perhaps the BATNA (best alternative to a negotiated agreement) principle in business studies, see Fisher an Ury 1981.

focussing on the translator as a rational human being making rational choice decisions. It is also in this spirit that the present contribution hopes to contribute to encourage scholars to investigate economic models, specifically GT, in order to shed light on multilingual communication, mediated or non-mediated. Hsieh suggests that Levý's model could be re-worked and turned into a multi-party investigation by including other parties involved in the translation process, apart from the translator, namely the publisher, the reader and the author. Anthony Pym (2010) has also shown how GT can be applied to translator uncertainty. Gheorghita 2013 has also suggested that translation can be seen as a game in a GT framework. This could be a profitable avenue of research in future studies because it is precisely the difficulty of choice and translators' decisions that is captured in GT modelling. The developments in Translation- and Interpreting studies as well as in multilingual communication since Levý's publication in 1967 are profound[10], and it could be fruitful to re-examine game theoretic principles and terminology in the light of mediated and non-mediated multilingual communication. This is true of both written translation and interpreting, and nowhere more so than in dialogic interpreting where each interlocutor's ('player's') discourse is deeply embedded in the others', and the resulting emerging meaning is a complex whole reciprocally constructed (see Rudvin 2006). While Levý's translation-decision analysis is in essence a 'one-person game', a dialogic situation with an interpreter mediating the conversation is a complex 'multi-party game' where each person is assessing, evaluating and calculating the other interlocutors' utterances and behaviour, unfolding in a dynamic interactive process. In a professional setting it is somewhat easier to factor in the data, based on discourse conventions that will broadly lead the dialogue in a particular direction (depending of course on the contextual variables)[11]. In non-mediated multilingual events, the literature on lingua francas, especially English as a lingua franca[12], has developed enormously since the turn of the millennium, as well as studies on various translanguaging phenomena (e.g. Canagarajah 2011; García and Wei 2014).

GT could prove useful not only as a descriptive tool through which to further examine the cognitive decision-making process of oral or written translation, but to describe those extralinguistic factors that impact all multilingual situations. In a multilingual professional or institutional setting which is mediated by an

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[10] The present author discussed this in a 2006 paper in the light of paradigm shifts in the humantities generally, but there is by now ample literature on this, see Pym 2010 or also Hsieh 2015 for a succinct overview. See e.g. Pöchhacker 2004 for a descritpion of the development of Interpreting Studies.

[11] Conversation analysis is precisely the application of a focused analysis of each move in a conversation. In spontaneous conversation, some parameters can be factored in as analysable data in terms of cultural discourse and behavioural preference based on convention (e.g. low/high context, (in)directness, hierarchy, power distance, gender, reaction to face threats, acquiescence, etc.); spontaneous conversation unfolds and is less strictly governed and arguably less predictable. Needless to say, individual behaviour and unique ('random') circumstances are very difficult to factor in in any model, let alone a mathematically quantifiable one.

[12] See e.g. Seidlhofer 2004 but there is a wealth of literature in this area.

interpreter, the interpreter has a mediating function that may compensate for the disparity in access to information and may further act to align mutual mismatches in players' expectations and thus have a collaborative effect. For practical and cost-related reasons, however, most human multilingual encounters take place without any form of external mediation, through the use of a lingua franca or multilingual language exchange. All such communication is by definition supported by more or less extensive accommodation (in a broad sense) strategies. I argue that an awareness (and self-awareness) of the underlying processes that each interlocutor intuitively and reciprocally engages in could help to pre-empt communication breakdowns resulting from different language usage and expectations (positive or negative stereotypes) of the other participant(s)'s behaviour.

*1.2 Intercultural models*

Generally speaking, discourse and communication strategies of participants in a multilingual encounter, that we will here call moves in accordance with GT theory, are enacted on the basis of their expectations of the opponents' moves and how this may succeed or fail due to (in)congruent expectations in behaviour and discourse models. Multilingual discourse encounters involving highly diverse culture-governed implied meaning and pragmatic discourse features and strategies (alignment issues, politeness, face, silence, humour, conversation management, and turn-taking, topic avoidance, institutional and social power issues) can easily lead to mis- or non-understandings[13], confusion, hostility and ultimately communication breakdown if not detected and or repaired/mediated. Not only can intercultural communicative breakdowns be damaging but can also lead to further stereotypical and prejudicial labelling (Lemak 2012) and initiate a negative spiral of prejudice and mis-communication. Multilingual and intercultural interactions have been successfully captured by the sufficiently robust intercultural models of Hall, Hofstede and Hampden-Turner through which we gain insight into human communicative behaviour and through which such behaviour is, at least to some degree, predictable[14].

As we will see, intercultural interactions can be seen as a series of actions and moves based on the subject's assumptions, expectations and evaluation of the interlocutor's probable decisions, however. The task of applying GT to

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[13] Deterding 2013 differentiates between non- and misunderstandings: while a misunderstanding can go undetected, a listener is usually immediately aware of a non-understanding and resulting gap in comprehension (See Boyd and Rudvin 2018, 171-2.). See also Allwood & Abelar 1984 and Kaur 2009 on non-comprehension.

[14] These intercultural models adopted in numerous disciplines are undoubtedly valid analytical frameworks despite the danger of over-generalization (and therefore stereotyping); the large data sets on which they are built safeguard a certain degree of representativeness and provide a valid methodological tool. See Dudik and Gordon 2013. De Jong and Warmelink 2017 apply an adapted version of Hofstede's dimensions to intercultural simulation games.

intercultural and multilingual communication is not a simple one, as the linguistic, cultural and psychological complexity of multilingual interaction does not lend itself easily to numerical quantification and predictability, nor is it simple to scrutinize the covert thought processes leading to expectations and decision-making in an intercultural multilingual encounter (or indeed any encounter). Furthermore, in professional settings not only are the needs and expectations of the primary interlocutors different (their shared cultural, social, political and linguistic knowledge[15]) but also their institutionally-governed communication systems, such as the way in which they couch their requests and information, the way in which they perceive and describe events (temporality in narrative) or states of being (illness), appropriate institutional and hierarchical forms of address long/short-term orientation, etc. GT in a narrow sense is a complex analytical system that requires mathematical competence to investigate and evaluate complex data, but it has also been adopted in a more 'soft' fashion, employing the basic ideas and framework, strategies, terminology and goals in a non-mathematical manner (a recent example is Boileau 2015). A 'soft' approach also makes GT more accessible by using a layman's description to readers who, like the author, are not versed in economics, statistics, maths, or formal logic. The aim of this paper is thus to provide a terminological-conceptual description of a GT and in this way to help readers exploit the opportunities that GT can provide to better understand the underlying dynamics that lead to decision-making in both mediated and non-mediated multilingual encounters. Following Hsieh (2015) and Gheorghita (2013), respectively, the translator–and more generally the interlocutor in a multilingual communicative event–can indeed be seen as a *homo sapiens oeconomicus* as well as a *homo ludens*.

## 2. The basic principles and terminology of Game Theory

The game metaphor in general language–as well as in academic domains–is a common one that has little to do with the ludic aspect of playing or entertainment and more to do with the strategic, competitive aspects of a win-lose exchange that involves evaluating the other person(s)'s moves, precisely as in a game of chess or a board- or card-game (if the stakes are financial, as in a poker game, the relevance of the metaphor becomes more evident). The game/play metaphor refers generally

[15] Norman Fairclough's 1995 volume is perhaps one of the best-known works on this phenomenon in language studies, also triggering the branch of Critical Discourse Analysis; the underlyimg principles of CDA was preceded by decades if not centuries of work in anthropology, sociology, psychology and communication studies, and of course later what came to be known as Cultural Studies (see e.g. Jackson 2012). The rise of intercultural studies in the postwar period, especially in the business setting, was also a huge impetus in shedding light on how the human thought process and communication systems functions not just individually but also collectively in conventionalized forms.

to human cognitive processes of decision-making and action, indeed, the corresponding verb 'to play' is also a frequent metaphor in everyday language, for example in 'play it by ear' or 'it's a different ballgame'.[16]

The way people 'play out' strategic decisions could be encapsulated in these broad categories: the desired objective; the information each person has; and how each person believes the other party will react to their own decisions and moves, thus introducing an aspect of prediction and careful evaluation. It is this strategic reflection and calculation of one's own moves on the basis of how one believes the interlocutor will (re)act that lies at the heart of the 'game' metaphor. The a priori assumption underlying this prediction is that the other person will behave according to the same rules[17] and according to the same logic, in what economists refer to as rational behaviour. As philosophers and psychologists, from David Hume to Sigmund Freud (challenging the quintessential Enlightenment paradigm, see Boileau 2015 or Hsieh 2015) have long suggested, however, people do not, of course, always behave rationally, and this is one of the difficulties of creating robust economic models of human behaviour that are not just explanatory (looking backward), but predictive (looking forward).

In order to claim representativeness and predictability, economists thus deal with very large datasets. Although the inability to capture (irrational) human behaviour or random demographic, geographic, political or other more individual behavioural variables may render a model either less robust or much more complex, GT has been successfully used to illustrate situations in which human behaviour is deeply irrational and unpredictable by suggesting that in a particular strategic framework people nevertheless tend to behave predictably in order to reach a particular good or benefit, objective or outcome, just like a game of chess or poker (see Boileau 2015). The more information that the analyst has about past behaviour (iterated experience, habit, convention), the more robust the model becomes because it suggests that the agent (player) will 'play' (behave, reason or act) in one way rather than another with a certain amount of probability.

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[16] The game metaphor has been used broadly with reference to politics (most famously so, the Great Game of the British-Russian contest over Afghanistan in the 19th Century, immortalized through Kipling); in philosophy, the metaphor has been used extensively in the works of scholars such as Gadamer and Wittgenstein; GT has also been studies through philosophy (see Ross 2016).

[17] Didactic games such as *Baranga* are used in intercultural research and training to demonstrate how crucial it is not just to play by the same rules in an interpersonal exchange situation, but to be aware of the sharing of those rules, of a shared communication code (Thiagarahan and Thiagarajan 2006). The issue of predictability is important in the context of games. This is illustrated in the differences between a game such as chess and one such as poker where, in the latter, random variables (the distribution of cards) are much higher (although they can be statistically calculated and human communication signals can be interpreted by other players during the game).

## 2.1    Rationality, communication and information

A game theoretic analysis helps to uncover and predict how participants or 'players' in a 'game' make their decisions based on their expectations of the opponents' decisions. According to the situation, the players may adopt numerous strategies: they may take actions, make decisions, threaten, form coalitions and/or take other actions, the consequence of which is to receive some sort of benefit/reward, punishment or monetary loss or gain. The gain may be more or less tangible.

A number of cognitive as well as communicative features underpin this process, the first of which is rationality and the second being access to information. In its most basic framework, GT assumes (as do many economic models) that participants–players–reason and behave *rationally*, in their own best interest to maximise their own gain, and also expect their opponents to behave according to rational reasoning (not against their own interests); indeed, 'rational expectations' is an important principle in economic theory. The scope of this paper does not allow for a discussion on rationality, a fraught and complex issue[18]; it is important to understand, however, that the GT terminology regarding rationality and reasoning is based on an internal logic rather than an intuitive understanding of rationality (an assumption which philosophers and psychologists, but also many other disciplines in the humanities, have demonstrated is not at all straightforward[19]). Another way of putting this is that a person's rationality is based on their preferences (they will decide–rationally–based on what they prefer and also what they desire in terms of outcome). The articulation of that preference may be very complex, however; for example, it may be governed by altruism and not (just) straightforward profit or obvious benefit, and this seem counter-intuitive. The weak point–but also the strength–of this theory lies in its being able to identify, account for, factor in and numerically quantify those preferences and predicted outcomes in a 'payoff matrix'. At the same time, it is factoring in and quantifying effectively and reliably the complex variables–the data–that seems to be the sticking point.
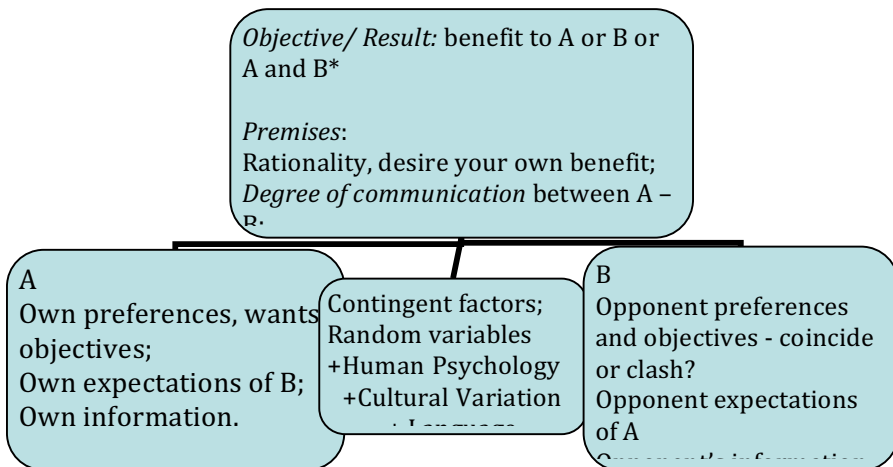
A player's assessment of his/her own behaviour as well as that of the opponent's behaviour is based on the *information* available; each player must assess how much information the other player has and how s/he will act on the basis of that information. An underlying assumption is that the player will play his/her best,

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[18] See Benz et al. 2006, Allott 2006, Jäger 2008 Boileau 2015 to name only three of the numerous studies that tackle this issue.

[19] For an excellent discussion of rationality, and problematization of GT terminology, in a Kantian framework, see Ross 2016. See Boileau 2015 for a critique of a simplistic use of rationality but see also Benz et al. 2006 and Jäger 2006 for an explanation of rationality in a GT framework. See also Benz et al. 2006 for an explanation of two broad approaches in GT that are governed precisely by (non)adoption of a straightforward rationalistic approach.  See also Weibull 1995 on evolutionary GT.

and that the opponent will play flawlessly (see Davis 1997; Benz et al. 2006, Jäger 2002, Allott 2006). (Un)equal access to information is thus a prime consideration in GT and the key to being able to predict players' behaviour and thus the outcome of the situation. Information also has to be credible in order for it to be believed and acted upon by the other party. The notion of 'cheap talk' is discussed in GT (Farrell 1993; Jäger et al 2011; Stalnaker 2006) meaning that empty talk such as vain boasting is information easily provided but that does not necessarily affect the evaluation of the person speaking to the same degree as more credible information. Costly talk (such as certain politeness strategies, see Van Rooij and Sevenster 2006) might seem self-defeating and cost much effort, but if they are interpreted correctly, may be more credible.

We can capture the situation (objectives and parameters) simplistically in the following diagram.



*Objective/ Result:* benefit to A or B or A and B*

*Premises*:
Rationality, desire your own benefit;
*Degree of communication* between A – B.

A
Own preferences, wants objectives;
Own expectations of B;
Own information.

Contingent factors;
Random variables
+Human Psychology
+Cultural Variation

B
Opponent preferences and objectives - coincide or clash?
Opponent expectations of A

* A = You, B = Other/ Opponent (A and B can be individual or group)
Figure 1. Objectives, Premises, Information level and contingent factors

Very simply put, each player must assess the extent to which his/her goals coincide or clash with the opponent's and consequently decide whether to cooperate or compete with him/her; the result will be a blending of players' mutual and conflicting interests (Davis, 1997: xiv). Chance and randomness clearly render decisions more complex, but then players apply *past experience* and laws of probability and rationality.

*2.2 Players, Zero-sum, Utility[20]*

The participants in a GT model are referred to as **Players**. The classical **two-person game** is the simplest form of game, even though most games consist of a set of players. A one-person game (called decision theory) is also possible, such as in solitaire or gambling (or translation). The number of players can in theory be infinite (economists deal with very large numbers in macroeconomic models). The **Zero-Sum game** is the most basic game type in which two players have diametrically opposite interests and no common interests; therefore, the sum of gains is a constant sum. (Two nations trading, however, would be a non-zero sum game since they both gain; Davis, 1997: 14). *A zero-sum game is competitive,* and one party's loss is the other party's gain (as in the prisoner's dilemma below, or as in a game of chess), but a *non-zero sum game is more cooperative*, and both parties can gain, the sum being greater than 0. Non-zero sum, games where both players win, are more nebulous and lend themselves less easily to quantification. In real life it would be more realistic to think of two-person games on a continuum with zero-sum on one extreme end (which is extremely rare, see Davis, 1997: 81) and cooperative game on other end of scale.

The classical two-person zero-sum game can be captured in the following manner (from Davis, 1997: 12):

|   |   | I | II | III |
|---|---|---|---|---|
| **You** | **A** | 5 | -2 | 1 |
|   | **B** | 6 | 4 | 2 |
|   | **C** | 0 | 7 | -1 |

*Figure 2: Two-person zero-sum game Your opponent*

Explanation: Player 1, 'you' pick a row and player 2, 'your opponent' picks a column, neither knowing what the other has picked; the number where the row and column intersect is the amount your opponent *pays you* in dollars. So, if you pick row A and your opponent picks column III, you will receive a dollar. If your opponent chooses II you would have to pay two dollars to him/her since the number is negative. If you play C you have a chance at your greatest possible gain, 7, but will your opponent cooperate by choosing II? What would you do if you knew your opponent's strategy in advance? If your choice depends on your opponent's strategy, what will you do when you don't know what he or she will do?

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[20] This section is based primarily on Davis's (non-technical) 1997 and Benz et al.'s 2006 introductions to GT, but is also informed by the works of Franke, de Jaegher, Benz, Jäger and van Rooij and other works cited in the references at the end of this article.

How is the outcome of a game quantified? Clearly, it is difficult to quantify 'gain' in any precise manner when dealing with human behaviour and communication. Nevertheless, game theorists in various disciplines other than economics (sociologists, business studies scholars, anthropologists, psychologists) do try to assign a quantitative value to these gains or payoffs, however nebulous, by assigning them a **Utility Value** which is measured by the degree of the players' preferences towards these gains. This could be seen as their 'want value' – how much or how little a player wants something; this could be in a tangible form (goods) or something else, such as a service or an action to take place. Clearly people want different things (Davis 1997: 61), so the utility value will have to take into account very complex variables and models. *Utility is thus measured by how much people want something, their preferences for that thing*, how they can reach this goal and how satisfied they will be with it. Based on how much a person wants something, one can measure how much they are willing to pay for it. "A utility function is simply a "quantification" of a person's preferences with respect to certain objects" (Davis 1997:62). If a player's preferences are sufficiently consistent, they can be expressed in a utility function (Davis 1997:63-64): in a GT model, individual people maximise wants, not their utility function, but they act as though they were maximising their utility function. Consequently, if a player's preferences are observed, then a utility function can be established. What happens when preferences change? Game theorists make this model even more complex by quantifying things such as inconsistent personality and preferences, namely **Intransitivity**. Some scholars believe that true intransitivity (inconsistent personality and preferences) rarely arises and that inconsistency is due to indifference towards goals, not changing preferences; inconsistencies can, at least to some degree, be weeded out with large number of tests (ibid). We see here that GT is a utilitarian model, based on measuring people's satisfaction, as in the utilitarian branch of philosophy. In this brief description, we also see that players' preferences, wants and objectives form a logical, or rational, process that underlies decision-making.

## 2.3 Strategies, equilibria and solutions

The players perform actions that are called **Moves** which reflect a strategy, in the sense of a 'plan'. The players, as in chess or as in military strategies, must anticipate other players' moves in order to optimize the outcome**.** The player's **Strategy** is thus his/her plan of action, describing what the player will do. A strategy is *dominant* if the person is always better off playing that particular strategy, it is the best action regardless of what other the player chooses to do. A *pure* strategy is the one which a player will unconditionally choose, but a *mixed* strategy is when a player is using more than one pure strategy. A strategy that leads to a **Minimax** solution consists in minimizing the other party's

maximum, i.e. when each participant minimizes the maximum loss the other can impose on him (i.e. defensive). In a **Maximin** strategy, the player maximizes his/her minimum. In real life it is virtually impossible to describe fully a set of complex strategies, and strategies and solutions operate on an overlapping continuum. **Equilibrium points**, when there is a payoff to both parties, are reached when **equilibrium strategies** are employed. A **Nash Equilibrium** (after the Nobel-prize winning economist John Nash portrayed in the celebrated film *A Beautiful Mind* with Russell Crowe) is achieved when any further move or change will result in a loss for either party, and thus both parties have little room for manoeuvre (see Benz et al. 2006; see Davis 1997 or Boileau 2015 for 'soft' introductions). Strategies of cooperation are enacted to achieve a solution that is favourable to both parties.[21]

In early models of GT **Perfect information** was considered to be a basic assumption, yet it quickly became clear that in real life (i.e. not in a game of chess or solitaire) most players have **Imperfect information**. The players' gain or profit is called the **Payoffs**. This is modelled by assigning to the gain(s) a numerical value. As mentioned, in a Zero-sum game the sum of payoffs, no matter what actions chosen by players, is zero (one loses, one gains). Each game then has a value which can be measured in payoffs; optimal strategies will guarantee this value.

*2.4 Classical Prisoner's Dilemma*

The 'Prisoner's Dilemma' is a simple, proverbial example in various adaptations that is commonly used to illustrate GT methodology. Consider the following (adapted from Davis 1997):

> Two thieves have been apprehended and are being questioned by police officers in two separate rooms; they have no contact and thus no way to exchange information. Each prisoner's welfare will depend on the other prisoner's choice, but in order to evaluate the other person's choice they have no external information but must rely on former information (experience) and (mis)trust. If both thieves do not confess and deny, or stay quiet, they will each be sentenced to 3 months' imprisonment. If thief 1 informs on thief 2, thief 2 gets a 9 year sentence. If thief 2 informs on thief 1 s/he gets 0 years and thief 2 gets 9 years. If they both inform, they both get 6 years. The police obviously exploit the lack of information exchange and rely on mistrust in order to maximise their own gain.

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[21] Coalitional strategy forms (societies, groups) take place where the value and worth of the coalition itself replaces the strategy; then we find a tendency to favour common interests.

Thief 1

| | | Confess | Deny |
|---|---|---|---|
| | *Confess* | Both go to jail for 6 years | Thief 1 gets 9 years, *Thief 2 goes free* |
| *Thief 2* | | | |
| | *Deny* | *Thief 2 gets 9 years*, Thief 1 goes free | Both go to jail for 3 months |

*Figure 3: Classical Prisoner's Dilemma*

## 2.5 Risk propensity

Making a decision will depend to a large extent on information quantity and quality (which captures prior information and knowledge, experience, new information, knowledge of the other player's thinking, knowledge of statistical probability, etc.) but also on risk-propensity, i.e. how willing you are to take a risk that could go in your favour without having enough information to be sure of the outcome. This is also a basic premise of decision-making theory. Risk-propensity can be both individual (depending on personality, age, circumstances, frame of mind, socialization, family, etc.) and collective (arguably captured in Hofstede's notion of uncertainty avoidance), depending on cultural characteristics into which each person has, broadly, been socialized.

How much one is willing to invest in terms of money or energy will clearly depend on the person's prior resources, but may also be quite subtle: for example, a rich person might not gamble for $50 but a poor person might, given that the need is so much higher (see Davis 1997). This depends on factors such as current needs and status quo, and the ratio of payoff to current holdings. Thus, there is a price for security and risk-aversion. People also decide differently when a problem is described differently, so decisions are also based on how the problem (and subsequent risk, gain) is presented (Davis 1997:70ff). Personality also affects decision-making, e.g. "trustworthiness and trustingness". Unsuccessful attempts have been made to corroborate decision-making to gender, ethnicity and intelligence, but there have been some results linking profession and previous experience; there is also a tendency for players to become less cooperative as the game evolves (Davis 1997:157).

*2.6 Competition/Collaboration and Communication*

Sometimes monetary payoffs then, are not important, but other more intangible factors are at stake (Davis, 1997: 58). In simple competitive zero-sum games (war, business, sports) the basic premise is a loser/winner and the aim is to hurt the opponent. However, in many situations a player might *not* want to maximise gains (e.g. a parent playing for coins with their child). In these situations, the game is not **competitive**, but **collaborative** (Davis 1997: 80ff). These games allow for information exchange between players and can lead to binding agreements. Clearly, here there is a strong incentive to work together in order to receive the largest total payoff sum. Again, to which degree players have common interests has to be placed on a continuum rather than as a binary set of strategy options. Many games are complex with both competitive and collaborative goals for players. A single player may, furthermore, have mixed motives (in the same way that they may be inconsistent in their preferences). Payoffs must also be high enough to render desirable the effort of collaboration. For example, in competitive game experiments, beating one's partner can become more important that maximising payoffs (Davis 1997: 158).

The issue of **communication** between players is also crucial in GT and profoundly affects the players' strategies, incentive, motivation and the resulting payoffs. GT shows also, contrary perhaps to common sense logic, that communication between players is not always an advantage (Davis 1997: 90ff). Paradoxically, not only is withholding information from your opponent often an advantage, but sometimes not having access to information yourself (i.e. the inability to communicate) may be an advantage. For example, experiments have shown that communication between players sometimes degenerates into threats: "The *inability* to communicate may well work to one player's advantage, and this advantage is lost if there is a way to communicate, even though no actual communication occurs" (Davis, 1997: 91-92). The "effect of allowing communication depends on the attitudes of the players and, in turn, the attitudes of the players may be affected by the ability to communicate" (Davis, 1997: 158). Tacit guessing and information based on reading other person's expressions, behaviour and moves can, furthermore, be easily misunderstood (Davis, 1997: 94). Complex psychological models are proposed to account for these issues, and clearly, the spectrum is wide: from no communication to freely flowing communication. It is important to remember that repetitive (iterated) playing leads to accumulated **experience** and increased predictability, for example, by playing bridge or poker with the same participants repeatedly. In zero-sum competition, communication has less significance, but in completely cooperative games, the problem of communication becomes crucial (see Boileau 2015).

Recapitulating in very broad brushstrokes, the sequencing of a decision-making process could be portrayed in the following manner:

- having a preference (measurable as a utility according to how much you want it);
- having (or not) information about the situation;
- having (or not) information about the interlocutor's preferences (leading to expectations regarding their behaviour and decision);
- evaluating past experience in past 'games';
- deciding.

## 3. Intercultural and multilingual communication through a game-theoretic lens

What seems to be a straightforward communicative event or a 'game' in a mono-lingual situation is rendered increasingly complex in a multilingual[22] situation in which language discrepancies also reflect differing communicative norms, expectations and cultural values. Furthermore, a multilingual encounter through a lingua franca[23] could be mediated through an external mediator (culture broker, interpreter), or it could be self-mediated through various accommodation strategies.

This brief description of GT has hopefully made clear the relevance of GT to illustrate the dynamics involved when interlocutors in a multilingual (self-mediated or externally mediated) situation select communication strategies through which to communicate and reach a desired goal. There is much common ground both in the premises for this game and the terminology used: two or more players in a communicative situation where each is trying to interpret the other(s)'s intentions through a given communication code where there is imperfect information (because the language codes differ and the access to shared knowledge differs); a constant decision-making process of interpretation and (possible) collaborative accommodation[24]; a strategic decision-making framework through language-specific and field-specific discourse strategies; the desire to use those communication forms to reach a desired goal. This shared ground and common terminology is even more evident when a mediator (either in the strong sense as a culture broker or in the weak sense as an interpreter) is involved.

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[22] Where two or more languages are involved. These languages would typically represent different ethnic origins, but could also represent multilingual situations with people from the same country, such as India, South Africa, Nigeria or Switzerland.

[23] For the purposes of this paper we will be using English as an example of a lingua franca, but it could of course be Arabic, Hindi/Urdu, French, Spanish or some other world language.

[24] See e.g. Cogo 2009; Cogo and Dewey 2012; Seidelhofer 2004, to name only a few, for studies on accommodation, a crucial feature of ELF; see these same studies on misunderstanding and repair.

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A multilingual encounter that takes place in an institutional professional setting could indeed be seen as a game where strategic communicative decisions are taken on the basis of each player's expectations of the other's moves, within the parameters of an institutional bureaucratic framework, for example police questioning, a trial, a refugee hearing, a job interview, a doctor-patient consultation, an interview seeking social security benefits. Each person could be seen as a 'player' engaging in verbal and non-verbal communicative activity in order to achieve a specific objective, and evaluating and anticipating each other's strategies. However, in multilingual settings, the players may not be/have:

- playing by the same communicative rules;
- similar expectations and 'wants';
- aware that they are playing by different rules;
- approve of each other's rules;
- have the same immediate or long-term agenda or objective.

In an institutional setting, although the immediate objective may be the same or similar (treatment, cure, a verdict, completing an asylum application, etc.), the more long-term objectives[25] may not be congruent and the underlying covert strategic moves of the various players may be leading the encounter in opposite directions and creating mistrust. People who have been socialized into the same deep cultural values arguably base their decisions on similar un-spoken assumptions, but this is not necessarily the case in multilingual intercultural settings. Although in other professional business settings it may lean more in the direction of competitive than cooperative, in institutional settings, the objective is seldom a minimax zero-sum game but a more cooperative one, and may contain a set of mixed communication strategies. The need to reach a positive outcome and the incentive for collaboration and cooperation (non-zero sum game) is arguably higher in a transactional multilingual setting in a professional domain.

## 3.1. Mixed strategies

Players will negotiate their moves in whatever discoursal channel is appropriate at that particular moment to further their immediate or long-term goals, through a story/narrative (e.g. patient, defendant, asylum-seeker), through a vast range of discoursal strategies, such as question- answer pair, request, topic or speech avoidance, silence, face negotiation, hedging, gap-filling and the use of phatic speech, foregrounding, turn-taking management/interruption, acquiescence,

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[25] For example, the patient may desire a holistic treatment plan aiming at psychological and emotional well-being, not just treatment of symptoms; a defendant might be devising strategies to achieve an acquittal or light sentence while the arbitrator is assessing factual information; an asylum seeker might be hoping to leave the country but is hampered by the Dublin agreement, and may or may not wish to provide factual information.

isagreement, etc. However, strategies may lead to communication breakdown rather than goal fulfilment when they are not misunderstood[26].

### 3.1.1 *Access to information and communication*

As in any game with a concrete objective in mind, access to information is crucial. Unequal access in an intercultural institutional multilingual setting could be related to many factors, but these three parameters could help organize the various (overlapping) contexts involved:

*Immediate (situational) context* – the institution's access to expert information vs the layperson's access to that same information will lead to asymmetry; the degree of information available to the layperson will also depend on the institution's willingness to share and divulgate–in comprehensible language–that information or to keep it as covert as possible, thus self-regulating access to services; i.e. withheld information, as a strategic move in order to enhance an existing power distance and display of authority. For reasons of time a doctor will not explain all the medical technicalities to a patient; a cross-examining lawyer or judge may deliberately withhold his/her questioning techniques and possibly the workings of the legal system - from the interlocutor. The police officer or guilty suspect who is withholding information are both playing win-lose minimax game strategies. Patient-doctor communication may seem intrinsically collaborative, but this is not always so, for example when a patient is suspected of withholding information about a health situation (e.g. to claim benefits, prescription or sick-leave, or deny drug-habits).

*Linguistic context* – the knowledge of the interlocutor's language specific features (for example pragmatic features in the use of silence or indirect relationship-building communication) mentioned above.

*Cultural context* – the knowledge of the interlocutor's culture-specific features (for example Hofstede's 2004 power distance, or any other dimension, in that specific institutional setting, doctor-patient, judge-defendant).

In a zero-sum competitive game, communication is sometimes withheld among players, as mentioned. In a non-zero-sum collaborative game, however, there is no reason for which communication should not be shared and "sometimes communication can move the game from a competitive dynamic to a cooperative

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[26] Huth and Teleghani-Nikazm (in Lemak 2012:16) show how pragmatic errors are more likely than lexical or grammatical errors to be seen as due to speaker personality rather than lack of pragmatic competence. Thus, culture-governed pragmatic strategies, especially as relating to face and politeness, are potentially sites of communication breakdown and hostility. Van Rooij and Sevenster 2006 illustrate how the misalignment of speakers' politeness preferences, where the player is aligning the opponent's preferences, can lead to poor communication and is a costly rather than cost-effective strategy.

dynamic" (Boileau, 2015: 29). Nevertheless, information might be withheld 'inadvertently', as it were, even in a collaborative non-zero sum game. This might happen for a number of cultural/pragmatic reasons related to discourse features, especially relating to High and Low Context Communication behaviour. High and low context preference will determine strategies such as hedging, indirectness, and, at face value at least, may lead to non-communication and non-disclosure of potentially significant information, which may lead to misunderstanding and mistrust. Other strategies that tend to favour non-disclosure of information, i.e. non-communication, are topic-avoidance (culturally inappropriate content), silence (language external rather internal: pauses and silence to suggest contextual information rather than relating to discourse cohesive factors such as a shift in turns, syntax marking, foregrounding, division of meaning units, etc.). Gratuitous acquiescence (a tendency to not contradict but towards using an 'empty yes' as a relationship-maintaining feature, i.e. not openly contradicting), is particularly prone to misunderstanding both in private and institutional multilingual and intercultural contexts. Negative face, a desire to avoid intrusion, is another potentially disruptive (if misunderstood) non-communication strategy. The players' strategies may not be congruent if those wants are culturally-governed and remain unexplained and mis-understood.[27]

### 3.1.2 Payoffs

What seems to emerge from this brief discussion is, unsurprisingly, the benefits of increased communication and an open information channel. Increased communication and increased information will give the interlocutors more 'data' on which to calculate their moves because they know what the other person is more likely to do and when they can be trusted. When a common goal is negotiated and reached cooperatively, an equilibrium is established. The payoff may not necessarily coincide with the initial wants and goals of either party and the objectives may shift during the course of the 'game' as a result of cooperative behaviour. The freer the information exchange (access to information) and the more open the communication channel is – the more likely it is that a non-zero sum (rather than zero-sum) situation is established. In the presence of an external mediator (culture broker, mediator, interpreter), a higher payoff seems to be more likely, if that mediator is competent and in good faith. In the absence of an external

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[27] In a multilingual setting involving migrants, it is important to remember that conditions, and thus contingent parameters as well as 'wants', change through a temporal arc of acculturation and what might loosely be termed 'integration'. By the same token, with increased exposure to multilingual and intercultural settings (and the increased access to information that comes with migration as well as globalization and media technology), institutions and their representatives adapt to the communication behaviour and goals of their foreign-language speaking clients, and communication can over time become more collaborative as cultural information is exchanged and expectations and goals are better understood and adjust to each other.

mediator, a self-mediation process by the two parties will automatically kick in, unless either party has absolutely no interest in the game-playing negotiation (arguably, the more transactional an encounter the less likely this would be). Decision-making and 'game-playing' might also be affected by the dynamics between the players and if they are playing individually or in a group (on each side): a decision taken as a single individual (a person alone in an institutional setting rather than in a group) could lead to more defensive and less risk-prone strategies.

### 3.1.3 Limitations to the benefits of GT

As mentioned at the beginning of the paper, game-theoretic models assume rational behavior, and this may at times fly in the face of the more irrational tendencies in human communication and behavior, of subjectivity and of individual personality; such behavior might be more successfully captured and explained through a psychoanalytical framework (engaging the impact of the subconscious on human behaviour; see e.g. Boileau 2015). Furthermore, the very concept of rational behavior as envisioned in a game theoretic academic context may in itself be ethnocentric.

### 3.2 Data – examples of strategic moves in dialogic discourse with a focus on accommodation

The three dialogues[28] that follow illustrate how interlocutors use game-playing strategies and moves and show how (non)accommodation is at the heart of a complex transactional dialogue that can be modelled as a game. I will not venture to attempt a mathematical representation here, suffice it to describe the relevant parameters.

**Example 1**
Examples 1 and 2 are taken from Boyd and Rudvin 2018. The data were collected at a migration centre in southern Italy by one of the authors; the interactions are between legal advisors and migrants in the process of applying for asylum. In example 1 we see two young Afghans (S2 and S3), who have been travelling for five months, ask for assistance in filing for asylum. The cultural mediator (S1), who has been asked by the lawyer to ascertain personal information, asks some questions, starting with enquiring about their entry point into Italy and the reasons for leaving their country.

    1  S1:    and why you \<pvc\> live {leave} \</pvc\> your country
    2  S2:    indahara, indahar (.) I'm from indahar[29]

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[28] Examples 1 and 2 have been transcribed according to the VOICE transcription conventions [2.0]. http://www.univie.ac.at/voice.
[29] The place of origin has been transcribed phonetically but has not been geographically identified.

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3 S1:   why you <pvc> live {leave} </pvc> it
4 S2:   why you (3)
5 S3:   city? you asking for city? =
6 S2:   = what you asking about?
7 S1:   why you <pvc> live {leave} </pvc> your country? (.) why you..
8 S2:   <un>xxx</un>you, you better know that, there is no facility (.)
        I mean there is no (.) er peace there is war, fighting. taliban.xxxx
```

The obstacle can be captured in the Italian lawyer's mispronunciation of the verb 'leave' (pronounced with a short vowel) and understood by S2 as 'live' (i.e. 'where do you live'), repeated in several turns. (An extended analysis can be found in Boyd and Rudvin 2018.) The two Afghans, whose immediate desire is to have information about the asylum process and the ultimate goal political asylum, presumably enact strategies that will maintain the pace of the 'game' and further their ultimate goal. They indicate a keen desire to engage in a cooperative game by using accommodation strategies ranging from responsiveness[30] to silence (turn 4), to a rephrasing of the question (turn 5), and finally an open, more face-threatening, question (turn 6) when understanding has still not been achieved.

These utterances all signal speaker moves to gain mutual comprehension. S2 draws upon a number of resources to negotiate meaning and achieve mutual comprehension engaging in intense face-saving negotiations to maintain propositional content and at the same time face-saving (relationship maintenance, harmony). The immediate payoff is completing the asylum application procedure and the ultimate payoff, in a subsequent phase and 'game', a successful application.

The Italian mediator engages much less in clarification, accommodation and face-saving (turns 3, 7) as her wants are administrative, and the ultimate success of the asylum application does not really affect her.[31] In turn 7 she simply reiterates her initial question, despite the intense negotiation through successive moves by the Afghans. Why she is withholding this information (i.e. not clarifying or rephrasing the question) could be due to lack of will, motivation, effort of accommodation, or simply of English proficiency as an Italian ELF user.

Repetition and paraphrasing are used by the two Afghans to pre-empt and avert problems and is "typical of a transactional conversation involving the exchange of information for a specific purpose and where the stakes are very high, at least for one of the interlocutors. We assume that the higher the stakes, the higher the level of cooperation and face-work by the interested party" (see Boyd and Rudvin 2018). In this case, the discourse and communication preferences are arguably given by the cultural patterns that are played out in communication strategies. (That is not

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[30] In turn 2, S2 responds to the question he understood) and enacts highly face-saving moves towards the listener through *receptive convergence* (Cogo and Dewey 2012).

[31] The authors' interpretation of the dialogue is also based on the audio-recordings where the live voices convey further valuable context. Although based on informed evaluations, any interpretation is partial and/or incomplete and represents only the author's own voice.

to say that individual rather than culturally convention-based preferences, patterns and wants are at play, that is impossible to fully assess.) The information balance is also misaligned: the first time they meet the asylum seekers are not prepared culturally or bureaucratically, at least not to the same extent as the Italian lawyer. For the Afghans, no information about the transaction, culture or person (the lawyer) can be gleaned from past experience and decisions are taken based on assumptions and evaluation of the other's utterances, behaviour and feedback pattern. The lawyer, however, who has been in similar situations before, may be planning her moves on the basis of previous experience with asylum seekers, possibly from the same country. Her moves will likely be governed by a combination of past experience, cultural assumptions and situational (administrative, bureaucratic) preferences[32]. The misalignment is exacerbated by institutional and possible socio-economic power asymmetry which also gives her the privilege to lead the Q/A based dialogue.

**Example 2**
In this example, the interlocutors are a Pakistani man (S2) being interviewed by an Italian language mediator (S1) at the Italian Council for Refugees. They are both speaking English, but only the mediator is a native speaker (illustrating the pitfalls of ELF communication when proficiency is limited and the need for a mediator/interpreter in the speaker's own language). S3 is a native speaker of English who is here functioning as a mediator trainer.

1 S1:   ok so how no your country of origin is
2 S2:   country Pakistan
3 S1:   \<pvc\> au {how} \<ipa\> aʊ \</ipa\> \</pvc\> and when did you arrive in Italy
4 S2.   Italy 9 months
5 S1:   and \<pvc\> au {how} \<ipa\> aʊ \</ipa\> \</pvc\>
6 S2:   house?
7 S1:   \<pvc\> au {how} \<ipa\> aʊ \</ipa\> \</pvc\> (.) \<pvc\> au {how} \<ipa\> aʊ \</ipa\> \</pvc\> did you arrive here
8 S2:   \<LNit\> lavoro \</LNit\> {work}
9 S3:   by boat?
10 S2:  si
11 S3:  by boat? (.) by aeroplane?
12 S2:  no (..) speedboat
13 S3:  from?

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[32] Factoring in probability to these analyses (as in example 1 in the appendix for a simple example) would increase the validity and usefuleness.

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14  S2:  er Greece (3)
15  S1:  why did you choose to come to Italy (.) why
16  S2:  problem Pakistan (..)
17  S3.  Why Italy
18  S2:  <LNit> si </LNit>  {yes}
19  S3:  why not Greece or another country (.) why did you choose Italy
20  S2:  Italy <LNit> buono </LNit> {good}< smiles>
21  S3:  <smiles>

In this exchange the Pakistani man continually using face-saving strategies "to protect the mediator's face and proactively take the initiative to avoid non-understanding or mis-communication" (ibid). Again, the mediator makes little effort to reformulate or adapt, reinforcing the existing power asymmetry in this elaborate game. 'Translanguaging', the Pakistani man uses key Italian words such as *casa* (house) and *Caritas* (a church-run charity offering assistance to migrants), and *questura* (police station). The parallel use of both native language (or lingua franca in this case) and institutional language (code-switching) by selecting a few core terms that refer to key pieces of administrative information for which there may be no translation, is cost-effective in terms of communication, and also typical of this multilingual administrative discourse domain (Zentella 1997 in Boyd and Rudvin 2018; see also Jenkins 2015, Canagarajah 2011, García and Wei 2014 on the use of two languages simultaneously). It is also possible that this move on the part of the Pakistani man is an attempt to gain prestige and empathy in the eyes of the authorities and further his own case (see Boyd and Rudvin 2018). The use of "yes" could be said to have the same accommodative function (gratuitous concurrence) that reinforces the power imbalance–i.e. not primarily agreement–but confirming that he is familiar with the concept or the institution nominated (while S1 believes, erroneously, that "yes" indicates that S2 has understood the whole sentence and agrees with her).

The Pakistani man is clearly struggling with comprehension and formulation in English, and accommodation moves are intense: gratuitous concurrence and choosing lexical items that are dense in propositional content ("problem Pakistan", turn 16). Turn 20, shows an intense, overt move towards S1, who, however, fails to react. In the dialogue that follows (see Boyd and Rudvin for the remaining dialogue), the mediator trainer (S3) steps into the conversation to assist the service provider and adopts a variety of accommodation strategies to further the dialogue and as a demonstration for the trainee, including fragmenting the sentences into clauses, speaking slowly and enunciating clearly (focusing on consonants), using simple lexis, paraphrasing and rephrasing in a more detailed manner. S1's efforts at accommodation continue to be meagre, she asks questions, establishes her role (maintaining power distance) and does little to clarify by way of verbal or non-verbal (voice and intonation) signals, impeding the transactional goal of the conversation. She seems not to be particularly concerned with S1's application and

more concerned with fulfilling her administrative duties. It is only through the mediator that a situation of unequal information is re-distributed, realigning power asymmetry, and that the migrant is able to activate his 'wants'. Lack of communication and imperfect information are constitutive of power asymmetry; the degree of cooperation is also impacted by this asymmetry.

Pakistan and Afghanistan are highly collectivist and hierarchical societies[33], high on the power distance ranking, so it would be natural for the non-Italian speakers to play along with this rule of the game, which, in essence they do; they do not challenge the Italian verbally or through para-verbal signals[34]. Their strategies are presumably governed by their cultural values but also the desire for an ultimate payoff. The desire for payoff (successful asylum application) would (intuitively speaking) counteract any gender imbalance and face-saving wants.

Later in this dialogue the phrase "for asylum" creates difficulties for S2 (turn 43), followed by a very long pause in which he seems to be assessing his next move, negotiating a careful balance between face and relationship-maintenance and comprehension of the propositional content.

42 S2: <LNit> sì</LNit> {yes} no}
43 S1: for asylum (6)
44 S2: <LNit> non ho capito </LNit> {I don't understand}

When S2 still does not understand he chooses to acquiesce with a "sì" rather than attempt a second FTA (S1 did not respond collaboratively to the first one). "These frequent passages of intense accommodation seem to be a clear indication of S2's acknowledgement of social and institutional hierarchy and cultural "politeness"." (Boyd and Rudvin 2018, 186). S1, on the other hand, continues to not accommodate and use expressions that are incomprehensible to S2, as mentioned; she seems to be only concerned about "fulfilling her legal and bureaucratic duties (and ascertaining that S2 understands the UNHCR definition of "refugee" and the bureaucratic procedure) regardless of whether he really does understand her questions or not. It seems to be a purely pro-forma routine rather than a transactional exchange" (Boyd and Rudvin 2018, 185).

GT lends itself well to the analysis of multilingual ELF (or translanguaging) encounters due to its–usually–highly cooperative nature (see Seidlhofer 2004) and constant evaluation of the interlocutors' propositional and pragmatic intent due precisely to the lack of shared world knowledge (to whatever degree). Assessing and evaluating the interlocutors' intent on the basis of imperfect information leads to a continual back-and-forth of moves that is enacted through the variety of accommodation strategies that the speakers have at hand, be it repetition, re-

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[33] See https://www.hofstede-insights.com/product/compare-countries/ for Pakistan.
[34] https://genderstats.un.org/#/countries. This could conceivably be offset by the gender configuration–the representative of the institution that represents a higher social power, at that moment, is a woman; both countries score high for gender imbalance.

articulation (slowness of speech, emphasis on certain phonetic or stress features, adopting words with high lexical density, syntactical and/or lexical simplification), topic change or non-verbal language through gaze, body-positioning, smiling (as encouragement and to mitigate a potentially face-threatening act). This high-investment 'feedback pattern' of the dialogue is aimed at pre-empting and/or solving misunderstandings in order to reach the desired goal (payoff). If the communicative event is transactional, the effort put into this dialogic mode will be governed by the strength of each interlocutor's 'want'. In a cooperative situation where each party desires a harmonious dialogue and a win-win (non-zero sum) outcome, the investment and effort put into pre-empting misunderstandings accommodation will arguably be congruent. If the desired outcome is less immediately transactional and relationship-building and harmony is foregrounded, or if face-negotiation is foregrounded, the 'let-it-pass' principle is more likely to be adopted (see Boyd and Rudvin 2018). However, in a transactional situation with a strong power imbalance, as we see in examples 1 and 2, where the 'wants' of the migrant and the service provider are misaligned, the effort and investment may be skewed. The interlocutors are adopting unequally convergent (reducing distance) and divergent (establishing distance) strategies (see Cogo and Dewey 2012). In these examples we see a complex balancing of let-it-pass and the foregrounding of propositional content, influenced by institutional, social and other contextual features of discourse power (ibid).

The payoff matrix could be represented simplistically in the following manner:

|  |  | **Italian lawyer** | |
|---|---|---|---|
|  |  | **Harmony** | **Indifference** |
| *Afghan* | *Harmony* | (1,-1) | (1,1) |
|  | *Indifference* | (-1,-1) | (-1,0) |

*Harmony* = relationship maintenance through face-negotiations (payoff for Afghan = higher likelihood to process his asylum application favourably).
*Indifference* = not engaging in maintenance and face negotiations (payoff for Italian lawyer = less investment of time and effort, minimal effort to fulfil bureaucratic obligations; possibly an increased power asymmetry that brings immediate gratification). This is not a generous interpretation, perhaps not even a likely one, but we will use it for the sake of argument.

Note that we have defined and modelled the preferences in a competitive, non-cooperative fashion assuming that the Italian lawyer's behaviour was due to her lack of accommodation in this passage. This is clearly an assumption on the part of the author, and the payoff matrix could alternatively have been modelled as a cooperative non-zero sum game where both parties gain from cooperative–accommodation based–strategies. Clearly, at the level of the community rather

than individuals and in a long-term socio-political perspective, this would be more desirable.

**Example 3**

INT = interpreter, US = American businessman, IT = Italian businessman

Example 3 is from Garzone and Rudvin (2003: 96-97) taken from an interpreter-mediated dialogue in the business setting illustrating a situation in which an American negotiator is discussing a business transaction with his Italian counterpart about a product being sold in Italy, stressing that he should general rules should be followed categorically (universalism, Hofstede 2004) when it comes to budget expenditure (sales promotion versus advertising) and no exceptions should be made to allow for the specificity of the situation (particularism, ibid). The American negotiator is clearly at an advantage in this game because he is playing by the (universal) rules, whereas the Italian negotiator is suggesting they tweak them. The dialogue then shows how the interpreter is drawn into the conversation when the conversation between the interlocutors–American and Italian negotiators–becomes heated and tense. The interpreter's decision is a difficult one, that of keeping a balance between: professionalism (keeping out of the argument), translating the conversation to both sides with minimal alteration, mitigating the emerging tension and conflict. In this case the interpreter departed from her professional role only momentarily to help harmonize the situation before reverting to her primary role as interpreter.

INT = interpreter, US = American businessman, IT = Italian businessman
- 1. IT      no:: non proprio. In quel caso si trattava di incentivi speciali per quantitativi, insomma. più:: ehm sul versante pubblicitario
- 2. INT    *not really. In that case it was special incentives for large quantities. More ehm more on the advertising side.*
- 3. US      sales promotion is sales promotion and advertising is advertising,
- 4. INT    *la sales promotion é sales promotion e :: (.) la pubblicità é pubblicità.*
- 5. IT      ((addressing the interpreter)) = sa:: ma:: glielo spieghi gli incentivi sono una forma di pubblicità
- 6. INT    *bu::t incentives are a form of advertising [after all]*
- 7. US      [he knows] that is not true:: (.) he knows we want our advertising money to be spent on advertising
- 8. INT    *lo sa bene che non é vero ehm lo sa che vogliamo che spendiate per la pubblicità i soldi che vi diamo per la pubblicità ((in a lower voice))guardi che non si riesce a convincerlo. da loro [le regole si applicano alla lettera]*
- 9. US      ((addressing the interpreter)) [Good, try to explain it to him]

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- 10. IT    ma al Sud lo fanno tutti. si fa sempre cosi (.) sennò:: non si vende non si vende proprio
- 11. INT  *but in Southern Italy all companies do it, they do it <u>all the time. Otherwise they won't sell anything</u> (.) it's it's current practice, you see.*

Example 3 with the Italian and US negotiators (players) seemed to suggest a zero-sum competitive game where the strategies of the Italian interlocutor was directly at odds with and contrasting with the culture-governed strategies of the American ("universalist", rule-respecting); but this may also have been a covert negotiating strategy where culture was used a pretext for excluding the opponent. He seemed to mis-interpret, for cultural reasons, the American's preference for allocating funds (see Garzone and Rudvin 2013). Whether or not the American negotiator desired the same payoff as the Italian negotiator (to maintain the contract and the relationship or to not renew the contract) and was competitive rather than cooperative, is impossible to know. It is possible that a cultural pretext ("universalist", sticking to the rules) was less costly in terms of effort and face negotiation than an open and equal access to and exchange of information; a lack of communication would then play to his advantage. In this case, however, the choices are incompatible: if the Amercian sticks to the rules, the Italian cannot tweak them. The solution will be given by the mandate (power) balance of the professional roles and the Italian is clearly the subordinate. His choice is whether to acquiesce to the role of his superior, or challenge him by pushing for the (intuitively common-sense and we assume culturally governed) strategy of tweaking. Either way he loses.

## 4. Conclusions: The presence of a mediator

It seems safe to say that the presence of a competent culture broker or language mediator, or an interpreter, may yield better results than a self-mediated multilingual encounter using a lingua franca, as seen in the examples above. Let us look again at the various phases involved, from a GT perspective. Players have
-    (un)equal information about the situation;
-    (un)equal information about the interlocutor;
-    unequal language code and linguacultural nexus and mutual knowledge of this;
-    an (un)equal power distribution (relevant to intercultural institutional discourse);
-    (ir)rational behaviour, according to own set of cultural beliefs and preferences;
-    Preferences and wants measurable through 'utility' and ultimate satisfaction value;

- rational choice assumptions to optimize own benefit;
- individual strategies related to their specific personalities and situation
- (do not) receive payoffs;
- reach an equilibrium where any action will affect the status quo (Nash Equilibrium or Pareto optimal);
- play a competitive zero-sum game or agree on cooperative mutually beneficial solution.

Most human intercultural activity, in a globalized world, is not mediated and people are largely left to themselves to the arduous task of enacting mutual comprehension among speakers of different linguacultures. The higher the awareness of the strategic parameters and choices involved, the more informed the interlocutors' decisions will be and the higher the chance of reaching a cooperative decision (in situations that are initially conflictual and litigious, the premise would be that the parties must be inclined towards cooperation to achieve an optimal solution and increased (mutual) payoff). Being informed of the culture- and language specific communication codes of the interlocutor is clearly crucial, and the most plausible way to pre-empt communication breakdowns. If the vehicular language is one of the party's native languages, this may hinder the awareness of linguacultural barriers and the willingness to make the effort to accommodate[35]. It may also create a strong power asymmetry where the (for example) native English speaker is at an enormous advantage. When both users are not native speakers, for example ELF users, the will to accommodate may be stronger, in order to reach the objective. As we saw in Examples 1 and 2 with the Afghan and Pakistani interlocutors, however, that is not necessarily the case, and the power balance may be such that only one party is willing to make a cooperative effort. As we saw in these same examples, the presence of a mediator deflated the situation. As a player in the game and through language accommodation strategies, her intervention created a free(er) exchange of communication and access to information that was valuable for the decision-making process. The face-negotiation (facilitated by the mediator) were expressions of linguacultural preference for the Afghan and Pakistani interlocutors, and strategic in their desire to reach the desired final payoff – a successful asylum application. Their moves were strategically governed by logic/rationality to reach a concrete payoff, and at the same time governed by collectivist cultural parameters of power-distance and face negotiation, upholding cultural conventions of non-confrontation. It was hard to say how aligned they were with the service provider's preferences and thus to establish an equilibrium.

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[35] Indeed, paradoxically, monolingual native English speakers are not the most effective ELF communicators; see as pointed out by Jenkins and others in this link from the BBC homepage http://www.bbc.com/capital/story/20161028-native-english-speakers-are-the-worlds-worst-communicators.

With this contribution I hope to encourage other scholars to apply GT to multilingual interactions in both mediated and non-mediated, transactional or more relationship-building settings. Ideally, specific features regarding the players' wants and desired final outcomes should be factored in to such an analysis. In this contribution we have suggested that strategies can be illustrated through intercultural dimensions as well as verbal and non-verbal, propositional and pragmatic behaviour.

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**Appendix:**

**Examples of one-, two-person games, cooperative and non-cooperative from Davies, Todd; course on Symbolic Systems: Computers and Social Decisions.** Spring Quarter 2001-2002, Stanford University.

Available at: https://web.stanford.edu/class/symbsys150/autonomous-decisions-5-1.html

**Expected utility theory** - decision theory for a single agent.
*Example 1*: Planning a party - a game against nature
Our agent is planning a party, and is worried about whether it will rain or not. The utilities and probabilities for each state and action can be represented as follows:

|  |  | **Nature's states**: |  |
|---|---|---|---|
|  |  | Rain (p=1/3) | No rain (~p=2/3) |
| **Party planner's possible actions:** | Outside | 1 | 3 |
|  | Inside | 2 | 2 |

The expected utility of an action A given uncertainty about a state S = Probability(S|A)*Utility(S|A) + Probability(not S|A)Utility(not S|A) Note that action A can be viewed as a compound gamble or *outcome*. Also, note that the probability of a state can depend on the agent's choice of action, although, in the above example, it does not.
For the party problem:
EU(Outside) = (1/3)(1) + (2/3)(3) = 2.33;
EU(Inside) = (1/3)(2) + (2/3)(2) = 2
Therefore, choose Outside, the action with the higher expected utility.

**(Noncooperative) game theory** - decision theory for more than one agent, each acting autonomously (no binding agreements).
In the examples below, we'll assume two self-utility maximizing agents (or players), each of whom has complete information about the options available to themselves and the other player as well as their own and the other's payoffs (utilities) under each option.

*Example 2* - Friends hoping to see each other

Consider two people, Chris and Kim. They both enjoy each other's company, but neither can communicate with the other before deciding whether to stay at home (where they would not see each other) or go to the beach this afternoon (where they *could* see each other). Each prefers going to the beach to being at home, and prefers being with the other person rather than being apart. This game can be represented by the following normal (or matrix) form:

**Kim**

|          | Home | Beach |
|----------|------|-------|
|          | Home | Beach |
| **Chris** Home | (0,0) | (0,1) |
| Beach    | (1,0) | (2,2) |

Each player has a set of *strategies* (={Home, Beach} for both players in this example). Specifying one strategy i for the row player (Chris) and one strategy j for the column player (Kim) yields an outcome, which is represented as a pair of payoffs (Rij,Cij), where Rij is the utility the row player receives, and Cij is the utility the column player receives. In this example, going to the beach is a *(strictly) dominant* strategy for each player, because it always yields the best outcome, no matter what the other player does. Thus, if the players are both maximizing their individual expected utilities, each will go to the beach. So Beach-Beach is a *dominant strategy equilibrium* for this game. Because of this, Kim and Chris, if they are rational, do not need to cooperate (make an agreement) ahead of time. Each can just pursue their own interest, and the best outcome will occur for both.

*Example 3* – "Friends" with asymmetric preferences
Now consider Betty and John. John likes Betty, but Betty doesn't like John that much. Each knows this, and neither wants to call the other before deciding what to do this afternoon: stay at their respective homes or go to the neighborhood swimming pool. Here is the normal form:

**John**

|          | Home | Pool |
|----------|------|------|
| **Betty** Home | (2,0) | (2,1) |
| Pool     | (3,0) | (1,2) |

In this case, Betty's best strategy depends on what John does. But if she assumes John is rational, she will reason that he will not stay home, because going to the pool is a dominant strategy for him. Knowing this, she can decide to stay home (because 2>1). This is called *iterated dominance*. In this example, Betty gets higher

utility than John because of their relative preferences, and John gets less utility than he would have if Betty wanted to be with him.

In this example, Pool-Home (3,0), Home-Pool (2,1), and Pool-Pool (1,2) are all *Pareto optimal* outcomes. An outcome is Pareto optimal (or *efficient*) if no agent can be made better off than that outcome without making another agent worse off. The equilibrium outcomes in both this example and the previous one are Pareto optimal.

*Example 4* - Prisoners' dilemma

Consider Stan and Leland, two prisoners who have each been offered a deal to turn state's witness (defect) against the other. They can't communicate. They had originally agreed to remain in solidarity, i.e. not testify against each other, but since the agreement cannot be enforced, each must choose whether to honor it. If both remain in solidarity, then they will each only be convicted of a minor charge. If only one defects, then the state will throw the book at the other and let the defector go. If they both defect, each will get convicted of a serious charge. The payoff matrix (higher positive utility implies a better outcome) is as follows:

|  |  | **Leland** | |
|  |  | Solidarity | Defection |
| **Stan** | Solidarity | (3,3) | (1,4) |
|  | Defection | (4,1) | (1,1) |

In this game, the strategy of defection is *weakly dominant* for each player, meaning that whatever the other player does, defecting yields an outcome at least as good and possibly better than remaining in solidarity would. Note that if the bottom right cell payoffs were (2,2) instead of (1,1), then defecting would be *strictly dominant* for each player. Either way, Defection-Defection is a dominant strategy equilibrium. However, it is *not* Pareto optimal. Both players could be made better off if neither defected against the other.

This is an example of a *social dilemma*: a situation in which each agent's autonomous maximization of self-utility leads to an inefficient outcome. Such a situation can occur for any number of people, not just two. An agreement by two people to trade with each other (involving goods, services, and/or money) set's up a prisoners' dilemma-type game whenever the agreement cannot be enforced.

*Example 5* - Coordination

Let's go back to Chris and Kim. They are going to the same conference, and each is expecting the other to be there, but they haven't seen each other yet. The conferees have their choice of two activities on the first afternoon: swimming or hiking. They both hope to see each other -- if they don't they will have no fun,

and each prefers swimming over hiking. They must each decide what to do before knowing where the other is going. Here is the normal form:

**Kim**

Swim Hike

**Chris** Swim (2,2) (0,0)

Hike (0,0) (1,1)

The best outcome is obviously Swim-Swim, but going swimming is not dominant for either player. Both Swim-Swim and Hike-Hike have the property that each player's strategy is the best (or tied for the best) response to the other player's strategy in that pairing. This defines a more general equilibrium notion called the *Nash equilibrium*. The dominance equilibria of examples 1-3 are all Nash equilibria as well.

A third equilibrium exists in this game involving what are called *mixed strategies*. A mixed strategy is a probability distribution over the pure strategies (which are Swim and Hike for each player in this example). (Note that the players do not have to have the same set of strategies available to them, even though that has been the case in all our examples.) In this example, if each player individually throws a die and goes swimming if the die comes up 1 or 2, and goes hiking if the die comes up 3, 4, 5, or 6, the resulting expected utility (2/3 for each player) cannot be improved upon for either player given that the other player uses this strategy.

In 1950, John Nash (depicted somewhat fictitiously in the film *A Beautiful Mind* -- the book is more accurate!) proved that every finite game, involving any number of players, has at least one (Nash) equilibrium, though there might not be any that involve only pure strategies for all players. In this example, there are three equilibria: the mixed strategy equilibrium (Swim,1/3; Hike,2/3)-(Swim,1/3;Hike,2/3), and two pure strategy equilibria -- Swim-Swim and Hike-Hike. When there is more than one equilibrium, and players cannot make binding agreements, they must try to coordinate to arrive at an equilibrium outcome. When only one equilibrium is also Pareto optimal, as Swim-Swim is in this case, that fact should suggest to rational players that it will be the one around which they coordinate. Many other criteria for equilibrium selection have been studied (e.g. focal points, subgame perfection, stability -- see the reading on game theory).

*Example 6* – "Battle of the sexes"
Finally, let's consider Roy and Jen. They are going to the same conference as Kim and Chris in example 5. They each would prefer to be in the same place (the swim or the hike), but their preferences differ about which it should be. Roy would

rather go swimming, and Jen would rather go hiking. Here is the matrix form:

        **Jen**

        Swim Hike

**Roy** Swim (3,2)  (1,1)

      Hike  (1,1)  (2,3)

This game has three Nash equilibria: Swim-Swim, Hike-Hike, and (Swim,2/3; Hike,1/3)-(Swim,1/3;Hike,2/3). Note that the mixed strategies differ for each player in the third equilibrium: each goes to their preferred activity with 2/3 probability. All of the equilibria are Pareto optimal this time, so that does not help for selection. Only the mixed strategy equilibrium results in equal expected utilities for the two players, so if both value equality or symmetry, this might be the focal point. But of course it will be difficult for Roy and Jen to see that unless they have studied game theory!