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The role of gender and familiarity for speech and gestures during agreement in Greek conversation.

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· Abstract ·

Gestures are used in a pragmatic way in interactive contexts such as conversation. Agreement between interlocutors is an ordinary aspect of talk-in-interaction, which is expressed through various types of utterances and gestures. The interlocutors' status, such as gender and familiarity, may affect both their verbal and non-verbal behavior as previous research has shown. This study investigates the role of gender and familiarity on Greek speakers' speech and manual gestures when they agree with their interlocutors. To explore this, an elicitation experiment was conducted where an equal number of females and males were exposed to four different conditions, discussing a set topic with a familiar female, a familiar male, an unfamiliar female and an unfamiliar male interlocutor. Agreement utterances and manual gestures with or without speech were isolated and further examined for their frequency, form and distinct characteristics (number of hands, movement, palm orientation, handshape). The results show that females and males are predominantly more expressive verbally but also gesturally with unfamiliar males. In speech, the findings reveal that the two genders tend to express agreement in similar ways. The gesture data with speech, on the other hand, show females to be more productive than males across all conditions, and use a greater variety of gesture configuration. Nevertheless, both genders produce manual gestures with similar characteristics when agreeing, but not across the exact same conditions. The Open Hand, Palm Up and Palm Up Oblique seems to be the main manual gesture pattern for expressing agreement in Greek. As for gestures with non-speech, no noticeable differences were found between females and males. It is thus argued that gender and familiarity do have an effect on the way Greek speakers agree verbally but mainly non-verbally, and especially when it comes to gesture frequency.

Keywords: agreement · conversation · Greek language · manual gestures · speech · non-speech · familiarity · gender · females · males · target speaker · interlocutor · number of hands · movement · palm orientation · handshape ·

For my parents

Κάτω από τα τριανταφυλλένια πέλματά σου
δυο καρδιές-
η καρδιά της μητέρας
η καρδιά του πατέρα.
Πάτα γερά.
Δε θα πέσεις.

(Γ. Ρίτσος)

· Acknowledgments ·

Children learn how to speak, gesture and use different objects, but also how to behave and act as a part of society through imitation, to a great extent. In most cases, parents are the ones that institute these aspects through their own behavior offering powerful lessons for their children. I dedicate this thesis, the hardest task I have worked at thus far, to my parents, Athina and Nikos, two hard workers, who have showed me that being a good human and parent is not an outcome of a rich resumé, but a matter of selfless love, dedication, kindness, patience and learning. Μαμά και μπαμπά ευχαριστώ τον Θεό που σας έχω για γονείς μου!

I also want to thank my parents for bringing into life my sister, Anastasia, and so I am not alone in this life. Thank you for always lifting me up! To me, you are invaluable.

"The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires" (William Arthur Word). With this quote, I would like to express my gratitude to my supervisor, Marianne Gullberg, for the motivation and inspiration, for all the encouragement and her work on this project. I would also like to thank the co-supervisor Vassilios Sabatakakis for all the help and advice he provided throughout the thesis and the master program.

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· Abbreviations ·

CF Crossed Fingers

CH Close Hand

CM Cyclical Movement

FaF Familiar Female

FaM Familiar Male

FS Fingers Spread

G Grappolo

IFE Index Finger Extended

LM Lateral Movement

OH Open Hand

OLUM Oblique Left Upwards Movement

ORDM Oblique Right Downwards Movement

ORUM Oblique Right Upwards Movement

PA Palm Angular

PD Palm Down

PDO Palm Down Oblique

PF Palm Forwards

PS Palms Side

PSL Palm Side Leftwards

PSR Palm Side Rightwards

PT Palm Towards

PU Palm Up

PUO Palm Up Oblique

R Ring

RM Rotational Movement

SFM Saggital Forwards Movement

STM Sagittal Towards Movement

TS Target Speaker

UF Unfamiliar Female

UM Unfamiliar Male

VM Vertical Movement

· C H A P T E R 1 ·

1. Introduction

Writing about the verbal expression and *ethos* orators should have, Aristotle makes an allusion to non-verbal characteristics by highlighting the value of voice and "πῶς αὐτῇ δεῖ χρῆσθαι πρὸς ἕκαστον πάθος, …καὶ πῶς τοῖς τόνοις, …καὶ ῥυθμοῖς τίσι πρὸς ἕκαστα"[1] (Rhetoric, 1403b, 15-22). However, he disregards hand movements and other body actions that accompany the verbal act. Twenty-four centuries later, and without any, to my knowledge, systematic research on gestures in Greek, this study fills this gap of information. The thesis examines the way females and males express agreement in speech and gestures in Greek depending on the gender and the familiarity status of their interlocutor.

Speech and gesture form a tightly connected system, and thinking of gestures in agreement utterances, the first movement that likely comes in mind is head nodding. But, what about manual gestures? Even though they have gained much interest, their pragmatic use in conversation has not been much heeded. Moreover, previous research has shown that interlocutors' gender and familiarity may affect both the way they speak and their gestures. However, existing studies are few and dated. Further, although gestures predominantly occur in parallel with speech, there are some circumstances where gestures occur in silence, and they do not accompany speech. Even though these cases of gestures in non-speech are rare, this study investigates their production in agreement contexts, always in comparison to gender and familiarity.

The thesis has two fundamental objectives:

(1) The examination of the way native female and male Greek speakers express agreement towards their interlocutor in speech, depending on the gender and the degree of familiarity with the latter, and

(2) The investigation and analysis of both genders' manual gestures that express agreement either in speech or in non-speech, in parallel with the gender and the familiarity status of the interlocutor. Manual gestures are further explored for their configuration (number of hands, movement, palm orientation, handshape).

The main content of the thesis is structured in six chapters. Chapter 2 introduces the theoretical background. Section 2.1 discusses speech related to agreement, gender and familiarity, while section

[1] 'how it should be used for each particular emotion, …and how the tones, …and what rhythms are adapted to each subject' (translation retrieved from http://data.perseus.org/citations/urn:cts:greekLit:tlg0086.tlg038.perseus-eng1:1403b).

2.2 presents an overview of gestures, as well as their presence in agreement in speech, and the way gender and familiarity affect them. Chapter 3 constitutes a transition from previous research and gaps of knowledge to the current study and its questions. The methodology of the study is presented in Chapter 4 with a description of the participants, the design, the procedure, the coding of speech and gestures, and the analysis. Chapter 5 presents the results. Section 5.1 shows the findings that concern agreement in speech, 5.2 presents the results in manual gestures during speech, and 5.3 the results of manual gestures in non-speech. A discussion of the results is found in Chapter 6, where the main findings are further elaborated in comparison to previous research, and a critical outlook in combination with possible further investigation are presented in section 6.1. Lastly, Chapter 7 consists of a brief conclusion.

· C H A P T E R 2 ·

2. Theoretical background

2.1 Speech: agreement and gender

2.1.1 Agreement in conversation

Conversation is the natural locus of use of all human languages, as it is an activity through which people exchange information, express their feelings and desires, and elaborate their thoughts. They thus interact verbally to accomplish a range of everyday goals. Talk-in-interaction, with conversation being one type, focuses on the way social interaction is conducted and it has been examined in several ways (Hammersley, 2003; Horton, 2017; Kendon, 1990). One of the most noticeable approaches to talk-in-interaction is the theory of *Conversation Analysis* (CA henceforth), which has provided many key notions to the study of conversation used also outside of CA proper.

CA concentrates on talk-in-interaction during ordinary and formal circumstances that bear on shared cognition such as social conventions, rules and stereotypes (Goodwin & Heritage, 1990; Schegloff, 1991). *Turn-taking*, *adjacency pairs* and *preference* are fundamental concepts of CA. The former refers to the sequential organisation of a conversation that involves a systematicity in turn-transition (Sacks et al., 1974). The sequence in interaction requires the production of a first action by the speaker (the first part, e.g., invitation) that is followed by a second action uttered by the interlocutor (the second part, e.g., acceptance) provided after the completion of the first (Goodwin & Heritage, 1990). These pairs constitute the *adjacency pairs*, and the production of one presupposes the production of the other so that a conversation will take place. The concept of *preference* distinguishes the second pairs of the adjacency pairs as preferred and dispreferred, depending on the verbal action of the interlocutor. Thus, an invitation may be followed by either an acceptance (preferred second pair) or a refusal (dispreferred second pair) with each alternative to present peculiar features.

Agreement/disagreement can be said to be the second part in an adjacency pair where the first part can be either an assessment or a self-deprecation (assessment – agreement/disagreement; self-deprecation – disagreement/agreement, Pomerantz, 1984). In cases where the speakers make an initial assessment, that is a claim that comes in a prior turn, they expect the interlocutor to agree (preferred action), but the interlocutor may express disagreement instead (dispreferred action). In self-deprecation on the other hand, agreement is the dispreferred action as the speaker anticipates

disagreement towards his/her self-criticism by the interlocutor. In that case, disagreement is the preferred action. Assessment – agreement, that is when the speaker makes an initial claim and the interlocutor expresses agreement through a second assessment, is the adjacency pair that concerns the present study.

In terms of function, agreement operates as a mode for expressing solidarity, support and politeness. Pomerantz (1984) claims that agreement has a face-saving role as it constitutes a way of 'ratifying the interactants and interaction', while Sacks (1987) refers to agreement as a way to promote social solidarity. Agreement is also connected with positive politeness, -'a redress directed to the addressee's positive face', where the listener acknowledges the speaker's wants and desires (Brown & Levinson, 1987, p. 101)- since one of its strategies is *claiming common ground* as in cases where the interlocutor agrees with his/her speaker (ibid). As distinct from disagreement, agreement has noticeable characteristics concerning the way it is produced during a conversation. First, agreements are produced immediately after the prior turn's completion without delay, while disagreements are frequently delayed within the second assessment (Goodwin & Heritage, 1990; Pomerantz, 1984). Second, they come first in turn and they are unmarked, in the sense that there is not a preceding marker that forebodes the upcoming agreement (Myers, 1998). Instead, 'they occupy the entire agreement turn' (Pomerantz, 1984, p. 65). Disagreements on the other hand, are often introduced with a preface of weak agreement such as *well* and *yes, but* (Myers, 1998). Lastly, since they are not prefaced, they are 'accomplished with stated agreement components', that are produced in different evaluative types (see below; Pomerantz, 1984, p. 65).

In terms of expression, agreement is produced through different types. Pomerantz (1984) has distinguished between three main agreement types following a decrescendo concerning the degree of evaluation: *upgrade*, *same evaluation* and *downgrade*. *Upgrade* is considered to be the strongest way of expressing agreement, in which upgraded evaluative terms relative to the first assessment are incorporated in the second assessment. *Upgrade* can be expressed through either *a stronger than the prior evaluative term* or *an intervening intensifier that modifies the prior evaluative descriptor*. In *same evaluation*, the interlocutor asserts the speaker's statement by repeating it and often including the word 'too' in the end (e.g., 'I like it, too') or a proterm indicating same as the prior assessment (e.g., 'Yes, he is'). Finally, the weakest type of agreement in terms of evaluation, is *downgrade*. In such a case, the interlocutor produces his/her agreement assessment with down-scaled term compared to the speaker's prior evaluation term (e.g., gorgeous ~ pretty).

Even though Pomerantz' analysis constitutes the core in the field of the analysis of agreement in conversation, the categorisation is still broad. Although not many studies have concentrated on agreement in speech, some researchers have demonstrated specific linguistic components or

patterns that, among other circumstances, can be found in agreement utterances, as well. *Minimal responses* or *back-channel responses* such as 'yes', 'right' and 'um hmm', are short utterances that serve to indicate the continuous attention and co-participation of the interlocutor/listener (Reid, 1995; Zimmerman & West, 1975). Makri-Tsilipakou (1991) adds a variety of other responses in this set such as 'of course', 'exactly', 'definitely', 'sure', etc. When indicating the criteria under which minimal responses are distinguished, Reid (1995) mentions that, among others, they can express agreement. Kuo (1994) found back-channel responses to be one of the ways the listener agreed and showed his/her support and understanding for the prior assessment in radio conversation. *Repetition* has also been found as a way for the interlocutor to agree with the speaker (Brown & Levinson, 1987; Kuo, 1994). In such a case, the interlocutor repeats all or a part of the prior assessment expressing rapport to the speaker and emotional agreement with the utterance (ibid). Lastly, Tannen (1987) acknowledges that ratifying the speaker's contribution, and thus agreeing with him/her, is one of the functions of repetition in conversation.

2.1.1.1 Agreement in Greek conversation

A comparative study conducted by Johnson (2006) that looked at cross-cultural differences in (dis)agreement, indicated differences in the way two cultural communities in London (dis)agree. However, a comparison between Greek and other cultures in this aspect of conversation is still missing. Evidence for the linguistic patterns used in agreement in Greek conversation can be drawn from Makri-Tsilipakou's studies (1991; 1994a; 1994b; 2006), whose research has focused on agreement and disagreement during mixed-gender conversations in Greek. Based on the principles of CA and the theory of positive politeness, she has provided empirical data on how people agree when they talk in interaction in Greek.

Applying Pomerantz's three-grade scale (*upgrade*, *same evaluation*, *downgrade*; 1984) to an analysis of agreement in cross-sex Greek conversations, Makri-Tsilipakou (2006) found supplementation, repetition of the prior assessment, synonym terms and periphrasis. Repetition has also been identified as an agreement marker by Alvanoudi (2019), whose study revealed that one of the cohesive functions of repetition is the implementation of agreement. Makri-Tsilipakou's study (2006) showed that upgrades as well as downgrades were produced in agreement utterances, with the former to maximise the agreement with the interlocutor, and the latter to constitute the weakest type of agreement that could also forebode an upcoming disagreement. At the same time, laughter has been indicated as a way for the interlocutor to express agreement with what the speaker says. Fragments of conversations in Greek show that laughter is used as a signal of approval and support,

which gives 'the go-ahead' and encourages the speaker to continue (Makri-Tsilipakou, 1994a, p. 26).

Considering affiliation in the broad sense of agreement, Makri-Tsilipakou (1994b, 2006) investigated the affiliative role of intervention. *Indirect speech* acts, *repairs* and *back-channel responses* were taken into account as affiliative inteventions (for more details see Makri-Tsilipakou, 2006). Specifically, clarifying questions, supplementations, rephrasing, minimal responses and questions that extend the topic were found as affiliative interventions among the conversations (Makri-Tsilipakou, 2006). A considerable number of the above interventions were produced as overlaps and shallow or deep interruptions, indicating a face-saving strategy (Makri-Tsilipakou, 1994b). Between these three types, deep interruptions were used the most, with minimal responses covering a considerable amount of them (ibid).

2.1.2 Gender and familiarity in agreement in conversation

The definition of gender has concerned many psychologists of the last century. Despite the nuances in the terms used by scientists, *sex* commonly refers to the biological differences of males and females, whereas *gender* involves the social, cultural, and psychological constructs that distinguish men from women (Prysgoda & Chrisler, 2000; Shapiro, 1981). In the present study, the term gender is used as a conflation of the notions *gender* and *sex*, since participants' gender was equated with their sex.

Research focusing on gender differences and similarities in a specific part of conversation, that is agreement, is still lacking. However, some patterns have been suggested in studies investigating the role of gender in conversation in general. The consensus is that women assume a supportive role during a conversation and an affiliative tendency towards their interlocutors, which could lead to the assumption that they are more agreement-prone when they talk in interaction (e.g., Roger, 1989; Troemel-Ploetz, 1991). Men on the other hand, are considered to display more dominant behavior in conversation, and thus less affiliative participation is observed.

Lakoff (1973) refers to the characteristics of *women's language*, among which two may be connected to the affiliative nature of women. The production of words in their *figurative use* (e.g., 'adorable' compared to the neutral 'great'), that give emphasis in their speech, could be linked with *upgrade* in agreement, while the incorporation of *tag-questions* in the end of their sentences, invites the interlocutor -male or female- to express directly agreement or not. In a study of Johnson et al. (1996) on same-sex groups, women produced a higher number of agreements in all-female groups than men did in all-male groups. It is thought that the need for creating rapport with the

interlocutor and the high levels of positive/negative politeness arises from the sense of inferiority women have (Holmes, 1998).

Moving to the conversational characteristics of men, research reveals that they generally provide fewer contributions to their interlocutors. Specifically, men tend to be more unresponsive and interruptive with the conversational partners, with their interruptions not having a supportive role (Roger, 1987; Zimmerman & West, 1975). The high frequency of interruptions by men is a result of violation of turn-taking, negative reactions, control of the subject in conversation or even a form of power display (Karakowsky et al., 2004; West & Zimmerman, 1983; Zimmerman & West, 1975). Kennedy & Camden (1983) in contrast, found that interruptions are not a way through which men dominate women. Lastly, other findings suggest that men produce more disagreement utterances than women do, higher rates of counterarguments and less back-channel responses (McLachlan, 1991; Reid, 1995; Troemel-Ploetz, 1991).

Concerning the gender of the recipient/interlocutor and the way it affects the conversational behavior of the speaker depending on his/her gender, there are studies supporting the view that gender styles are mitigated in opposite-gender dyads. Women often masculanise their verbal act when men are present, and men show evidence of approaching the feminine conversational behavior when they discuss with women (Coates, 1986; Mulac et al.; 1988). Reid (1995) showed that even though males produced fewer minimal responses compared to women, the number of back-channels increased in their interaction with women interlocutors, suggesting that men seem to be aware of the fact that women show a preference towards active listenership. In parallel, Troemel-Ploetz (1991) states that men seek women's support and attention in conversation, expecting normative feminine behavior.

Finally, except for the gender of the interlocutors, familiarity seems to influence speakers with regards to their affiliative/disaffiliative reaction. According to McLchlan (1991), both women and men tend to agree rather than disagree when they talk with unfamiliars, while Moskowitz (1993) argues that men are friendlier towards an unfamiliar female, and women towards both a familiar and an unfamiliar female.

To summarise, evidence from studies on gender in interaction show that women have an affiliative behavior, which may provoke agreement more easily than in men, who tend to be neutral and reserved in their assessments. However, when it comes to opposite-gender conversations, men seem to adopt a less conservative verbal behavior with regards to expressiveness.

2.1.2.1 Gender in agreement in Greek conversation

The research of Makri-Tsilipakou (1991; 2006) on cross-sex conversations in Greek revealed noticeable differences concerning the way the two genders agree with an interactant of either the same or the opposite gender.

Starting with the type of agreement the two genders used most, *upgrade* was found to be popular in women, who continuously maximise the evaluative terms of the prior assessments (Makri-Tsilipakou, 1991). They often produce a series of agreement when they talk with female and male interlocutors, prompting men into an increased production of upgrade agreement utterances, even though they avoid the maximasation of the evaluative terms (ibid). Instead, men tend to use weaker types of agreement, which can be a *repetition* of the prior assessment or *downgrade* evaluations (Makri-Tsilipakou, 2006). Same evaluation agreements were equally produced by both men and women, but frequently for different purposes. While women used same evaluative terms to maintain agreement, men maintained disagreement sequences (Makri-Tsilipakou, 1991).

When expressing affiliation with the interlocutor, women produced much more minimal responses compared to men regardless of the gender of the recipient (Makri-Tsilipakou, 1994a). In contrast, men used more minimal responses when they were addressed to female rather than male recipients, showing that minimal responses are an affiliation type that is produced predominantly by women and during the presence of women in a conversation (ibid). As for affiliation laughter, which is also considered as a token of agreement, women appeared to laugh more both as speakers and as interlocutors (Makri-Tsilipakou, 1994b). Men on the other hand, were not only inactive in the deployment of laughter, but they also refused the invitation to laugh as recipients much more frequently than women did (ibid).

Finally, regarding the quantity of affiliative interventions in conversation, women produced more affiliative intrusions than men did (Makri-Tsilipakou, 1994b). The number was equally distributed across the gender of the recipient in women, while men interrupted more frequently in support when they were interacting with females than with males. Moreover, men were found to produce four times more disaffiliate topic changes compared to women, which shows that the latter tend to be more supportive in conversation and agreement oriented. Women's affiliative tendency is also supported by the fact that men appeared to interrupt more frequently for disagreement at an early stage 'shutting their interlocutors up', especially in cases where the recipient was female (Makri-Tsilipakou, 1994b, p. 419).

In sum, women appear to more frequently use agreement/affiliative utterances, a strategy that in some circumstances influences men when they talk to a female recipient, giving the impression that the affiliative behavior of women is well-grounded in both genders. Therefore, women are

more agreement/affiliative-prone than men, possibly because they are trying to preserve solidarity and support in social interaction.

2.2 Gestures: an overview

2.2.1 What are gestures?

Watching two people in a communicative interaction, we will notice a variety of movements performed either during the flow of speech or in the absence of it. Straightening the shirt, waving away mosquitoes or scratching an itchy foot, as well as pointing to the position of an object, shaping something and rejecting one's idea through a body action are some of the movements that could be observed. While the former three are considered to be natural movements of the human body without carrying a specific meaning, the later three are part of a rich nonverbal system that has 'the features of manifest deliberate expressiveness', called *gestures* (Kendon, 2004, p.15). They are defined as visible bodily actions that occur spontaneously and commonly at the same time with speech, contributing to the produced utterance in different ways (Kendon, 1993; 2004; McNeill, 1992).

Being tightly connected to speech, gestures form a system of expression and communication with structural dimensions in themselves. First, gestural activity is internally organised in *gesture phases*, which are *preparation*, *strokes* and *retractions* (Kendon, 2004). The *stroke* is the phase with the meaningful part of the gesture, where the expression of the movement is performed. The time covering the movement up to the onset of the stroke is the *preparation*, while in *recovery*, which follows the stroke phase, the articulators involved in the gesture return to their initial (not always) position of rest. It is often observed that the articulator freezes at the end of the stroke. This phase is referred to as *post-stroke hold* (Kendon, 2004; McNeill, 2005; see 'dependent holds' in Kita et al., 1998). The *preparation* with the *stroke* and any *post-stroke hold* constitute the *gesture phrase*, which in combination with the recovery make the *gesture unit* (Kendon, 2004).

Second, a gesture can be structurally analysed in terms of the articulators used in the gesture and their configurations, the direction of the movement and the place of articulation (Gullberg, 2010). In sign language and gesture studies, the articulators are the parts of the body that are involved in a movement excursion (what acts), such as head, eyebrows, shoulders, hands, torso, etc. The configuration of the articulators refers to the different shapes and the orientations that, for example, the hands can have (how it acts). Since the articulator performs a movement excursion, the direction of its movement is defined based on the point of departure and end (where

it acts). The excursion can take place in different locations in front of the speaker forming the *gesture space*, that is the location of action (see McNeill, 1992).

Gesture is not a linguistic but a semiotic system, and thus it can be semiotically classified. However, most of the proposed classifications distinguish gestures according to their relationship with speech. Therefore, gestures are divided by many researchers into those for which the presence of speech is deemed to be essential for conveying a meaning, and those that are fully lexicalised in the sense that the presence of speech is not obligatory and their meaning is known by the people who use them without accompanying speech. The latter are known as *emblems*, *symbolic* or *quotable gestures* (Efron, 1972; Ekman & Frisen, 1972, Kendon, 1993). These are conventionalised gestures that can be performed independently of speech, and they are recognised by a certain community, culture or group of people.

The former are often labelled as *speech-accompanying gestures* or *co-speech gestures*, and both terms refer to the link of gestural and verbal activity (Kendon, 1994; Rimé & Schiaratura, 1991). McNeill (1992) further labels gestures along dimensions such as *iconic* (they illustrate iconically what is being said), *metaphoric* (they represent an abstract idea), *beats* (rhythmic gestures that move along with the pitch of speech), and *deictic* (gestures that point to objects or events) gestures. Kendon (1988), focusing on the different ways a gesture is used in relation to the utterance, describes an ordering of gestures based on the degree of convention with speech (Kendon's continuum after McNeill, 1992). *Gesticulation* falls on one side of the continuum, where there is no convention, and gestures are used in parallel with speech as a holistic system (Kendon, 1988). Further along the continuum, the degree of conventionalisation is increased and the reliance on co-occurring speech is decreased, with *mime*, *emblems*, and finally *sign language*. An expanded Kendon's continuum was proposed by Gullberg (1998) with the integration of McNeill's classification in Kendon's ordering of gestures. Specifically, *gesticulation* was further expanded in a five-scale continuum starting from the more speech-dependent categories of gestures and leading to the more conventional (*beats* > *abstract deictics* > *metaphorics* > *concrete deictics* >*iconics*; for a detailed description see Gullberg, 1998).

Lastly, gesture is considered to be a system that serves both addressee-directed and speaker-directed functions. Gestures contribute to the transition of meaning and information (Heath, 1992; Melinger & Levelt, 2004), or they are used to indicate turn-taking (Streek & Hartge, 1992). Recent research has proposed that gestures not only have addressee-directed purposes but they also help the speakers themselves in that they could facilitate lexical retrieval (Krauss et al., 2000), they are involved in conceptual planning (Alibali et al., 2000), and they can be expressed in order to solve linguistic problems both in L1 and in L2 (Gullberg, 2008; 2013). Gestural studies in children have shown that nonverbal behavior helps infants in self-regulation (Rodríguez & Palacios, 2007),

learning about conservation (Ping & Goldin-Meadow, 2008), but also in memorization and in second language acquisition (Tellier, 2008).

2.2.2 Gestures and speech

The outcome of an orchestra is the production of music, but for the music to be produced, certain movements are required to be performed by the musicians. Just as these movements become part of the musician's action while he is producing the music, so too gestures are part of the speaker's behavior at the moment of speaking. Gestures and speech are considered to be an integrated system.

Gestures are deemed to be part of speech and not a separate system, since they 'occur automatically and universally with speech' (McNeill, 2005, p. 4). First, they are co-expressive in the sense that the thought or the meaning they express is the same, even though it is not realised identically. Gesture is the imagistic actualisation of the uttered speech. Evidence of the co-expressivity of speech and gesture have been drawn from crosslinguistic research. Depending on the semantic and syntactic verbalisation of human thought across languages, the representation of gestures differs revealing that linguistic differences affect the form of gestures (Brown & Gullberg, 2008; Kita & Özyürek, 2003; Özyürek et al., 2005). Second, gestures and speech are temporally aligned. It is the case that most of the strokes, which are the meaningful part of a gesture, are temporally coordinated with the co-expressive linguistic items (Gullberg, 2013; McNeill, 1992). The synchronicity of the two systems is also proved in cases of gesture holds, where gesture waits for speech (Gullberg, 2013), as well as in research that indicates that when speech stops, gestures do too (Graziano & Gullberg, 2018). Finally, there is experimental evidence that speech accompanied with gestures is processed faster than speech alone, supporting the view that, since more signals facilitate language processing, there is a tight link between language, speech and gesture (Holler et al., 2018). However, there are some circumstances where gestures can be used in the absence of speech in order to compensate. They can serve as solutions to linguistic problems, as floor holders, and they can even manage turn-taking (Gullberg, 2013).

Depending on the content of speech they contribute to, gestures may fulfil different functions. Kendon (2004) distinguishes between two main function categories with regards to the semantic interaction of speech and gesture: the *referential* function, where the gestural component makes reference to the content of the utterance it accompanies, and the *pragmatic* function, in which gesture is related to the meaning of the utterance, not in a referential way, but rather the stance or attitude towards what is said. However, these functions refer to the nonverbal behavior of the speaker regardless of his/her interaction with the interlocutor. Bavelas et al. (1992) introduced a

further function category of gestures that serves an interactive function. They called them *interactive gestures*, and the term refers to gestures that require a dialogue and they are used during the interaction of the interlocutors.

2.3 Gestures in agreement

Non-verbal behavior in agreement has received relatively little attention, and most of the studies that have investigated gestures used in agreement contexts focus on head nodding rather than on hand movements.

Head nodding is indeed used as a gestural agreement marker in many cultures around the world (Morris, 1977). Research in infants and children has shown that it is one of the earlier gestural components developed in young ages. In particular, children use head nodding either in isolation or in combination with speech in order to express their agreement to what their mother said or their agreement to do an activity (Fusaro et al., 2011; Guidetti, 2005). It has been argued that as children develop their discourse format year by year and tend to adapt to adult dialogue as they grow older, they produce more verbal and non-verbal agreement signals (Guidetti, 2005). Focusing on adults, Fusaro et al. (2014) revealed that mothers' head nodding, performed during their interaction with their children, conveyed agreement in most circumstances.

Many other researchers have studied head nodding, not as an agreement marker, but as a backchannel signal (Dixon & Foster, 1998; Helweg-Larsen et al., 2004; Reid, 1995). *Backchannel responses* or *minimal responses* (for a detailed analysis see Reid, 1995) are very often accompanied by head nodding. However, it is not clear whether these responses indicate agreement or not, since they mainly function as indicators of engagement in conversation. Thus, a head nodding may be used as a visual sign of understanding what the speaker says, an encouragement towards the speaker without interrupting, or it may ensure that the listener follows the flow of speech. Lastly, it may affirm the speaker's opinion and express an agreement.

Bavelas et al. (1992) enumerated different kinds of interactive gestures depending on their use in conversation. Among these kinds, there is one category that can indicate agreement with the interlocutor. *Citing* gestures, and specifically *general citing* gestures, are performed in cases where 'the speaker mentions something that the addressee had said earlier' (Bavelas et al., 1992, p. 396). The example provided for such a manual gesture is a palm up open hand gesture that flicks out briefly. Agreement is not explicitly acknowledged by the researchers as a condition in which *general citing* gestures may occur. However, taking into account that *general citing* gestures are equivalent to 'As you said earlier' (ibid), it is likely that these gestures indicate agreement since the speaker

reintroduces his/her interlocutor's view. This type of manual gesture has also been found to indicate common ground in conversations by Holler (2009). She also adds another form of interactive gesture to express common ground; the index finger extended handshape. Again, agreement is not mentioned as a context of use of these gestures, but, since common ground presupposes common beliefs and assumptions, such manual gestures could also occur to indicate affiliation and agreement.

2.4 Gestures, gender and familiarity

Research focusing on gender and familiarity differences in agreement contexts is still lacking. However, there are some studies that have investigated such differences during conversations in general, and they have reported that the gender of the interactants as well as the degree of familiarity may have an effect on their non-verbal behavior.

The consensus is that females gesture more frequently than males do, and that their gestural activity is more affiliative in conversations. Specifically, women have been found to nod their heads more than men (Helweg-Larsen et al., 2004) and to maintain more constant eye-contact (Exline et al., 1965) as listeners. Smiling and facial expressiveness have also been argued to be used more by females. Women are believed to smile more than men (Kramer, 1997) thereby showing an affiliative intention, and they tend to express their emotions through facial expressions (Eakins & Eakins, 1978). With regards to hand movements and handshapes, palm up gestures have been found to be used more by women (Friesen et al., 1979). On the other hand, men are considered to be less engaged gesturally in a conversation, which is often linked to their tendency for dominance. Making less eye-contact, performing fewer facial expressions, and providing a limited number of backchannel nonverbal signals seems to be more common in male gestural behavior (Eakins & Eakins, 1978; Exline et al., 1965; Helweg-Larsen et al., 2004). As for manual gestures Friesen et al. (1979) showed that pointing gestures (index finger extended) seem to be males' territory. However, there are some early studies that contradict these findings, reporting either a higher movement activity by males compared to females (Schlaich, 1976) or no significant differences between the two genders (Kennedy & Camden, 1983).

Research that has studied effects of the degree of familiarity has reported significant differences in the gestural behavior of the interlocutors. Bente et al. (1998) revealed that the frequency of body movement in males is higher in the familiar condition, while females presented almost equal activity in both familiar and unfamiliar conditions. As for the variation in their nonverbal behavior across the conditions, women presented more variation when their interlocutor was a familiar person.

Duncan & Fiske (1977) on the other hand, reported higher body movement activity for males and higher frequency of smiling and laughing for females in initial interviews, that is in an unfamiliar situation. They propose that a familiar condition, which could also be linked to a familiar interlocutor, would lead to a reduced body activity and thus, that fewer gender differences would be observed.

· C H A P T E R 3 ·

3. The current study

The literature review in chapter 2 has revealed a number of knowledge gaps concerning the role of gender and familiarity on multimodal expressions of agreement in conversation, especially on manual gestures. To address those gaps, the current study therefore asks the following research questions:

RQ1: How do female and male Greek speakers express agreement in speech depending on the gender of and the familiarity with the interlocutor?

RQ2: How do female and male Greek speakers express agreement in manual gestures during speech depending on the gender of and the familiarity with the interlocutor? Are there effects on frequency, number of hands, movement, palm orientation, and handshape?

RQ3: How do female and male Greek speakers express agreement in manual gestures during non-speech depending on the gender of and the familiarity with the interlocutor? Are there effects on frequency, number of hands, movement, palm orientation, and handshape?

3.1 Predictions

Speech:

a. Forms: Based on previous studies in agreement in Greek, it is predicted that participants may express their agreement through supplementation, rephrasing, back-channel responses, repetition or clarifying questions (Makri-Tsilipakou, 2006; Alvanoudi, 2019). All these agreement types may be coloured with upgrade, same evaluation, or downgrade (Pomerantz, 1984).

b. Gender & frequency: Since females are considered to be more agreement-prone than males, more agreement utterances are expected to be produced by females, involving upgrade evaluation (Makri-Tsilipakou, 1991).

c. Gender of and familiarity with the interlocutor & frequency: Based on previous studies (McLchlan (1991) and Moskowitz (1993) in conjunction with those of Coates (1986) and Mulac et al. (1988)), females are predicted to be more productive verbally with the familiar and unfamiliar females, and they will probably be more conservative with male interlocutors, assuming that they will adopt a masculine verbal act. Males are expected to be more

expressive with familiar and unfamiliar females, since they tend to approach a more feminine behavior.

Gestures:

a. Gender, familiarity & frequency: As for the frequency of manual gestures in agreement, taking into consideration that speech and gestures are an interconnected system and that more agreement utterances are predicted to be produced by females, it is anticipated that females' frequency of gestures will be higher than males. Moreover, depending on the type of interlocutor, and provided that as many as utterances are produced, the likelihood for gesturing is increased, the prediction is that gesture frequency will correspond to speech frequency across the conditions (for details see (b) and (c) above).

b. Formal characteristics of manual gestures: It is difficult to make predictions concerning their configuration, except for the IFE that has been found in Holler's research (2009) and the hint of palm up open hand gesture that is stated both in Bavelas et al. (1992) and Holler, since research is still lacking. This study should therefore be considered to be exploratory concerning the gestural characteristics of manual agreement. The matter of whether manual gestures differentiate during speech and non-speech is also under investigation due to the lack of studies on gestures in silence in agreement.

· C H A P T E R 4 ·

4. Methods

4.1 Participants

Forty participants (20 females) were recruited in Athens and in Porto-Heli, Greece. They were drawn from the department of Philology in the National and Kapodistrian University of Athens and from announcements that were uploaded on social media. The age range was 20-39 years (M^{age} = 28;6 for both males and females). Participants were native speakers of Greek and they were either students or graduates of higher or technological educational institutions. Their geographical and educational background was kept as uniform as possible, to avoid linguistic differences in their speech such as lack of competence and dialectal differences. Exclusion criteria included early bilingualism and paucity of gesturing.

4.1.1 Ethical considerations

Before taking part, all participants signed a consent form (Appendix A), which provided all the necessary information about the upcoming procedure, the usage of personal data and the handling of the recordings. They were also informed about their voluntarily participation and their anonymous treatment during the coding and the analysis of the data. Each of the participants was assigned a unique code which consisted of the letter P and a double-digit number (e.g., P01, P02 etc.). The signed consent form was returned to them through email and they were aware of the fact that they have the right to withdraw their participation at any time. Participants were offered refreshments and snacks while they were waiting for the experiment to start and a thank-you-gift was given as a token of appreciation for their willingness to contribute to the research.

4.2 Materials and tasks

4.2.1 Stimulus

To stimulate participants to debate and either agree or disagree with each other, a controversial conversation topic had to be chosen. In order to test the degree of controversy that a topic can generate, a pilot study was conducted. Two pilot groups were tested in a studio at Lund University

Humanities Lab. A JVC 4K and a Canon Legria camera were used for the videotaping of the participants. Participants discussed in pairs whose gender and familiarity structure emulated the real study. However, the groups did not have exactly the structure that was planned for the main study due to the difficulty of finding native Greek volunteers in Lund. Thus, a total of six individuals (3 females; mean age 28.3 for males and 24.3 for females) participated divided into two groups and both were assigned two controversial topics. The topics that were piloted included:

1. Capital punishment should be allowed and executed.
2. Private companies and public services should be required to hire 50% male and 50% female employees.
3. We should all be vegan (topic that was provided in both groups).

The pilot study revealed that the third topic raised a debate and evoked a more vivid and argumentative conversation between each pair of participants. All of them seemed to be well informed about veganism and in nutritional issues which allowed them to have a more structured and rich discussion. The statement *We should all be vegan* was chosen as the stimulus of the experiment.

4.2.2 Design

The participants were distributed in eight different groups crossing gender[2] and familiarity across the interlocutors and a target speaker. Each group consisted of five speakers. One was selected as target speaker who would interact with four other participants of different genders and familiarity status. The target speaker was asked to bring a female and a male person that s/he knew for at least two years. In other words, they should know each other well so that they could be considered as familiars. The remaining two speakers were recruited by the researcher and they had to be complete strangers, that is unfamiliar to the target speaker. In summary, each of the target speakers, that was either a female or a male one, discussed the chosen topic with a familiar male (henceforth FaM), a familiar female (FaF), an unfamiliar male (UM) and an unfamiliar female (UF) interlocutor (see Figure 1). In that way, four different discussant pairs were formed and they were all assigned the exactly same task.

[2] Participants were asked to indicate their gender in a questionnaire that followed the experiment. All participants' gender matched with their biological sex. Gender had to coincide with their sex, so that there is uniformity across the participants, clear distinction between women and men, and homogeneity across the results. Therefore, sex and gender were treated as a binary unit (for more details see Hyde et al., 2019).

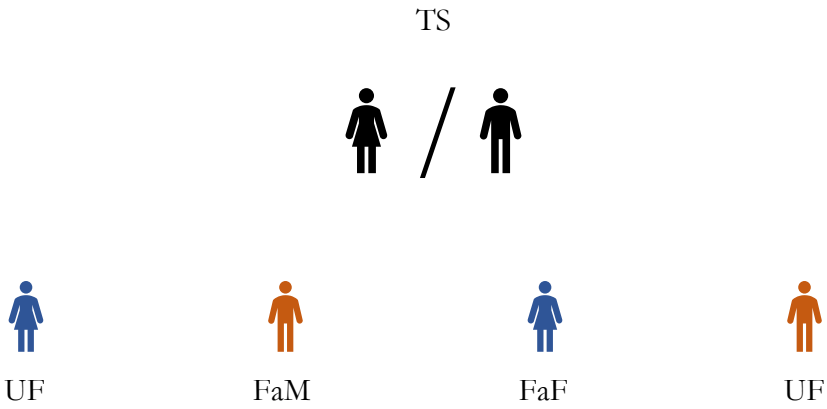

Figure 1. The internal structure of the groups. TS=target speaker, FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

As seen in Table 1, all eight groups were divided in two main categories; the ones that had a male as the target speaker and the ones that had a female as the target, as the purpose of this study is a between-subjects comparison (females ~ males). In order to prevent order effects, the order of interlocutors and their gender and familiarity status was rotated across the groups. Age was controlled in the groups such that no pair had an age gap of more than eight years so that neither the target speaker nor the interlocutor would feel uncomfortable. One of the groups was excluded due to the lack of gesturing on behalf of the target speaker and was replaced by another group.

Table 1. The structure of the groups. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

GROUPS	TARGET	1st INTERLOCUTOR	2nd INTERLOCUTOR	3rd INTERLOCUTOR	4th INTERLOCUTOR
Group 1	F	UF	FaM	FaF	UM
Group 2	F	UM	FaF	FaM	UF
Group 3	F	FaF	UM	UF	FaM
Group 4	F	FaM	UF	UM	FaF
Group 5	M	UF	FaM	FaF	UM
Group 6	M	FaF	UM	UF	FaM
Group 7	M	FaM	UF	UM	FaF
Group 8	M	UM	FaF	FaM	UF

4.3 Procedure

The experiments took place in Athens and in Porto-Heli in Greece during the months November-February, 2019-2020. The set up was piloted, and the conditions and especially the distances were secured to be similar for all groups. The target speaker was sitting 1.15m away from the interlocutor with a low table positioned between them. A Sony CX240E HD and a Panasonic HDCSD40 were placed 1.90m diagonally away from each speaker, both stabilized in 1m high tripods. Lastly, a script was created including all the necessary information about the procedure with details (Appendix B). It worked as a helpful tool for the researcher so that it was ensured that she followed exactly the same steps and she gave exactly the same instructions to all of the 8 groups.

All groups were tested in a quiet room. The cameras were turned on before the participants entered the experimental room so that their attention to the cameras would be as minimal as possible. The video material that covered the time up to the start of the experiment was disregarded. The day before the experiment took place, a reminder text message was sent to the participants asking them to wear a dark color shirt with the explanation that it would facilitate the video recording. Dark color clothes in combination with the dark background in front of which participants were sitting, helped the speakers' movements to be as distinct as possible during coding. A small table was placed between the target speaker and the interlocutor creating a more familiar environment that could help them to feel more comfortable. The table was chosen to be low so that rest positions on the table could not occur.

Participants were offered snacks and refreshments while they were waiting for the experiment to start. At the same time, they were introduced to each other and they had a brief discussion on general issues such as studies, jobs and interests. Short information about the topic and the procedure was provided. Participants were informed that they would discuss a given topic in pairs and that all of the possible combinations would be made. At that point, they were asked to carefully read the consent form and sign it if they agreed to the conditions. The first pair was asked to remain in the experimental room. The other three participants went into another room and were listening to the music through headphones in order to be silent and to avoid discussions related to the experimental task.

Each pair was firstly introduced to the warm-up session which consisted of 4 different questions concerning nutritional issues and that way participants were prepared for the upcoming task:

1. What are your dietary habits?
2. Do you have any favourite cuisine?
3. How many meals do you eat a day?

4. What is your favourite cheat meal?

The main purpose of the warm-up was to familiarize the speakers with the presence of the cameras and help them to relax and consequently speak naturally. That way, the likelihood of gesturing was increased. The researcher was involved in the warm-up by sharing personal ideas and preferences and by commenting on participant's responses so that they will relax. The duration of the warm-up was not constant across all the pairs and varied depending on how comfortable the participant seemed to be. In other words, those that felt tense were encouraged to talk more in the context of each question while those that seemed to be comfortable were introduced to the next question more quickly.

After the completion of the warm-up, participants performed the experimental task. They were asked to discuss *We should all be vegan*. The topic was firstly presented in a written form to prevent influences by the intonation of the researcher's voice, and it was then read out loud. Participants were advised to feel free to present their thoughts and arguments with regards to the provided topic and either agree or disagree with their interlocutor. They were told that they should not worry about the time and that they would be interrupted when time was up. The researcher changed her seat at that point, keeping her back turned so that it was clear that she was not an addressee. All of the discussant pairs were interrupted when five minutes had passed except for some pairs that had finished their discussion earlier. The exact same procedure was followed with the rest of the interlocutors. The procedure for the warm-up and the experimental task lasted between 40 and 50 minutes in total in each group.

Following the experimental session participants filled in a general background and language questionnaire that had been sent to the participants through an email while they were discussing in pairs (Appendix C). Afterwards participants were debriefed and informed of the real structure of the groups and the content of the study and they were encouraged to ask questions. Finally, they were offered a thank-you-gift for their contribution to the study. The researcher then checked the video material for gestures lacking since she did not have visual contact with the participants during their conversation. The files were transferred to a hard disk immediately following the session.

4.4 Data treatment

4.4.1 Speech coding

The thesis investigates how female and male speakers' speech and gestures vary with regard to gender and familiarity of their interlocutors in agreement utterances. Therefore, speech was considered to be the starting point for the coding of the video material. All 32 video clips that

included recordings of the target speakers were firstly annotated so that stretches of speech relevant to agreement could be identified. Agreement utterances were annotated in the video annotation software ELAN[3] (v. 5.9). The video was not visible during the segmentation of speech so that the researcher would not be influenced by the non-verbal behavior of the target speakers.

In order to identify utterances that express agreement, the types categorised by Pomerantz (1984) and Makri-Tsilipakou (2006) were considered. The former distinguishes between three types of agreement (*upgrade*, *same evaluation*, *downgrade*), while the latter includes additional linguistic types of agreement such as *supplementation*, *synonym term*, *laughter, periphrasis* and *repetition of the initial assessment*. At the same time, the observation that agreement comes first in turn without a delay was taken into account (Myers, 1998). As Makri-Tsilipakou states, data often reveal that pre-existing categories are insufficient or they even negate precedent categorisations (2006). From this point of view thus, the utterances that had an affiliative, supportive or reinforcing character towards the interlocutor's view were marked as agreement utterances. Exclusion criteria included:

a. minimal responses that came second in turn by the target speaker and followed the interlocutor's agreement,

   e.g., Target (T): *I think that it is probably not that healthy.*

   Interlocutor (I): *I suppose that it is not.*

   T: ***Yes.***

   Thus, an utterance produced by a target speaker was identified as agreement only when it was subsequent to the interlocutor's initial assessment.

b. back-channel 'yes' and 'mhm' that were uttered by the target speakers in order for them to display that they had understood the interlocutors' information (Bavelas et al., 2012). Back-channel 'yes' and interjections often overlapped with the interlocutor's statement ('interrupting') and were uttered with low pitch. In contrast, 'yes' and 'mhm' that were coded as agreement markers were uttered with a higher pitch and followed the interlocutor's clause.

Once the stretches of speech had been marked in the annotation file, a translation in English was provided along with the identification of the utterance as an agreement (A). The overall annotated speech was divided into ten categories based on the different ways that expressions of agreement were realised. Except for some of Makri-Tsilipakou's types that were included in the categorisation, other categories were formed according to participants' actual production. Pomerantz's types were not treated as separate categories, but as a way through which participants coloured their utterances. Table 2 provides the categories of agreement display:

[3] The software can be found here: https://archive.mpi.nl/tla/elan.

Table 2. Agreement categories

Agreement categories	Definition	Examples
Affiliative Comment	A supportive comment towards interlocutor's statement.	[1] P17 (UM): *γιατί ο σίδηρος … φυτικής προέλευσης είναι διαφορετικός από της ζωικής και δεν απορροφάται* 'because the iron of plant sources is different from that of animal source and it is not absorbed' → P16 (F): *Μ' αρέσει που το 'χεις πάει επιστημονικά. Εξαιρετικό.* 'I like that you have approached it scientifically. Excellent.'
Clarification	The speaker ascertains that him/her and the interlocutor agree about the same belief.	[2] P37 (FaM): … *δεν μπορεί να πει ο άλλος εγώ είμαι μόνο κρεατοφάγος* '… another person cannot say I am a meat eater only' → P36 (F): *Ναι, είμαστε παμφάγοι εννοείς, ναι.* 'Yes, we are omnivorous beings **you mean**, yes.'
Confirmation	The speaker verifies that what the interlocutor said is true.	[3] P17 (UM): … *σου αλλάζει τελείως τη ζωή σου* '… it changes your life completely' → P16 (F): *Ναι ισχύει.* 'Yes, it's true'.
Explanation	The speaker presents the reason why the interlocutor's statement was true.	[4] P13 (FaF): *Οι παμφάγοι δεν έχουν όμως αυτό το επιθετικό.* 'Omnivorous people don't have an aggressive behavior.' → P11(M): *Ναι, γιατί ήταν πάντα έτσι και ήταν πάντα πιο πολλοί* 'Yes, **because** they were always like so and they were always much more'
Interjection	An exclamation.	[5] P40 (FaF): … *πιστεύω ότι κάνει καλό και στην υγεία σου.* '… I also believe that it is good for your health'.

		→ P36 (F): *Τς, α!* '(tongue click), ah!'
Negative Agreement	It indicates the disagreement of the speaker to the discussed topic on one hand and on the other hand his/her agreement to the interlocutor's disapproval.	[6] P09 (FaF): *Δεν συμφωνώ. Γιατί να είμαστε όλοι vegan;* I don't agree. Why should we all be vegan? → P06 (M): *Ναι, ούτε εγώ συμφωνώ γενικά.* 'Yes, neither do I agree generally'.
Reintroduction	The speaker repeats what the interlocutor has said, but after an intervening stretch of discourse.[4]	[7] P03 (FaM): *δεν είναι εύκολο…για λόγους υγείας* (00:14) … 'it's not easy…for health reasons (00:14) …' → P01 (F): … *και για ιατρικούς λόγους* (00:58) '… and for medical reasons'[5]
Repetition	The speaker repeats the whole statement or part of it, either unchanged or with the addition of other words.	[8] P14 (FaM): … *είναι ηθικά ορθό <u>απόλυτα</u>* … '… it is morally correct **entirely**…' → P11 (M): *<u>Απόλυτα</u>, ναι, ναι, ναι, ναι, ναι, συμφωνώ, σ' αυτό συμφωνώ.* '**Entirely**, yes, yes, yes, yes, yes, I agree, I agree on that'.
Rephrasing	The speaker expresses what the interlocutor said with alternative words.	[9] P33 (UF): … *αν κάποιος θέλει να είναι, εντάξει.* '…if someone wants to be, ok' → P31 (M): *Ναι οκ, επιλογή, ναι, ναι, ναι, ναι.* 'Yes ok, it's a choice, yes, yes, yes, yes'
Supplementation	The speaker adds new information that is relative to the antecedent statement of the interlocutor.	[10] P39 (UM): … *πρέπει να είναι μεγαλύτερη … η θυσία που θα κάνουμε* '… the sacrifice that we will do has to be bigger' → P16 (F): *<u>Ναι, ναι, ναι και</u> για τον εαυτό μας.* <u>'Yes, yes, yes and</u> for ourself'.

[4] Reintroduction has been distinguished from repetition, since a noteworthy span has intervened between the time the interlocutor produced a sentence and the time the target speaker reintroduces it when s/he eventually takes the floor.

[5] For an analytical transcription of the provided example see Appendix D.

4.4.2 Gesture coding

Following the identification of spoken utterances expressing agreement, any manual gestures occurring within these agreement utterances were then identified and coded in ELAN with sound turned off in order to avoid any influence from the content of speech (Gullberg, 2010).

Using frame-by-frame analysis of the digital video clips, gestures occurring within the stretches of speech that expressed agreement were firstly marked. Specifically, strokes and post-stroke holds were annotated, disregarding differences between these phases, since that was not part of the aim of the study. Unclear gestures, whose movement and shape could not be captured in the frame-by-frame examination, were excluded. All manual gestures identified were then coded for the number of hands involved in the gesture[6], the movement of the arm (elbow, wrist), the orientation of the palm and finally the handshape were specified (see Table 3).

Table 3. Gesture coding categories

Coding categories	Possible realisations
NUMBER OF HANDS	1 hand/2 hands
MOVEMENT	Cyclical / Lateral / Oblique Left Upwards / Oblique Right Upwards / Oblique Right Downwards / Rotational / Sagittal Forwards/ Sagittal Towards the target speaker / Vertical
PALM ORIENTATION	Palm Down / Palm Down Oblique / Palm Forwards / Palms Side / Palm Side Leftwards / Palm Side Rightwards / Palm Towards the speaker / Palm Up / Palm Up Oblique
HANDSHAPE	Close Hand / Crossed Fingers / Fingers Spread / Grappolo / Index Finger Extended / Open Hand / Palm Angular / Ring

Number of hands: In cases where both hands were engaged in a gesture, but one of them had a supportive role, it was the dominant hand that was coded and annotated in the tier[7] *Number of hands*

[6] Henceforth, he term 'gesture' indicates manual gestures, and not any other kind of gesture (e.g., head, torso, face, etc.).

[7] In ELAN, a tier includes a row of annotations in the Timeline Viewer that share same characteristics. For more information visit the User Guide for ELAN Linguistic Annotator site (https://www.mpi.nl/corpus/html/elan_ug).

(see Figure 2). For both hands to be annotated, they should have an equivalent role in the gestural action.

Figure 2. Example of a gesture where the right hand has a supportive role. The dominant hand is the left one which moves laterally.

Movement: A *Cyclical Movement* is considered to be "a continuous circular movement of the hand" (Ladewig, 2011, p. 2) which often ends up with a vertical or lateral movement depending on the initial position of the hand. In *Lateral Movement*, the hand is moving away from the midline horizontally (Kendon, 2004). The *Oblique Left Upwards* and the *Oblique Right Upwards Movement* start from a lower point close to the midline and move either leftwards or rightwards to an upper point. In contrast, an *Oblique Right Upwards Movement* starts from an upper point on the left and it moves rightwards to a lower one. In gestures where the wrist is rotated either inwards or outwards a *Rotational Movement* is expressed. The *Sagittal Towards Movement* was distinguished from *Sagittal Forwards Movement*, since the former moves towards the speaker him/herself, starting close to the torso and ending far from it, while the latter moves away the speaker, towards the interlocutor. Lastly, in *Vertical Movement* the hand is lowered vertically (Kendon, 2004). In cases where the hand was dropped vertically starting from a point close to the torso, a slight SFM was observed. However, the above movement was coded as a VM, since the SFM was a physical consequence of the initial position of the hand (see Figure 3).

Figure 3. Example of a non-prototypical Vertical Movement.

Palm orientation: Palm Up and *Palm Down* are self-explanatory. In cases where the palm of the hand had a slight gradient in comparison with the two above categories, the orientation was coded as *Palm Up Oblique* or *Palm Down Oblique* (see Figure 4). The term *Palms Side* refers to cases where the two palms are opposing, so that the left hand faces rightwards and the right hand faces leftwards. *Palm Side Rightwards* and *Palm Side Lefttwards* were used to indicate the orientation of the palm when only one hand was involved in a gesture. In PSR and PSL the forearm was found to be either in a horizontal or in a vertical position, while in PS it was always displayed in a horizontal position. *Palm Towards* the speaker and *Palm Forwards* the interlocutor are self-explanatory.

Figure 4a. Illustration of a Palm Up Oblique gesture.

Figure 4b. Illustration of a Palm Down Oblique gesture.

Handshape: The *Index Finger Extended* refers to a handshape where the index finger sticks out of the other flexed fingers. *Open Hand* refers to the hand that "is held with all digits extended and more or less adducted" (Kendon, 2004, p. 248). In contrast, in *Close Hand* the fingers are flexed shaping

a fist. In *Grappolo* all fingers are "drawn together so that they are in contact with one another at their tips" shaping that way a *bunch* (Kendon, 2004, p. 229). In *Ring* the tips of the thumb and the index finger touch each other shaping a circle (Kendon, 2004). In order for the hand shape where the fingers are crossed but the thumb is extended to be described, the term *Crossed Fingers* was used. *Fingers Spread* represents a handshape in which all digits are extended and away from each other (they are not 'adducted'; Figure 5a). The term *Palm Angular* was introduced to describe a shape where the fingers are flexed forming a 90° angle with the palm and in most cases the pinky and the thumb are extended (Figure 5b).

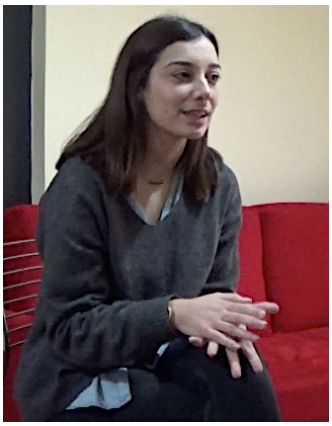

Figure 5a. Example of a Fingers Spread gesture.

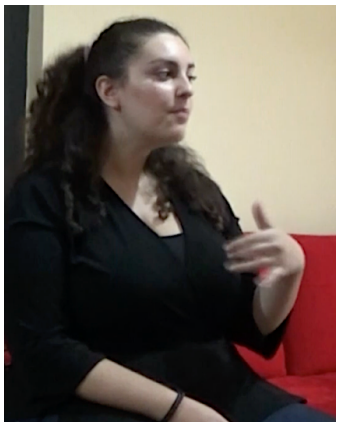

Figure 5b. Example of a Palm Angular gesture.

During the coding, it was observed that in some gestures the orientation and the way of spatial excursion was changing within the same stroke. That is, in a continuous manual gesture two different movements (e.g., STM and SFM) and/or two different orientations of the palm (e.g., OH and PA) occurred. These gestures were determined as Gestures with Internal Movement (GIM). The term was not included in the list of the handshapes during the coding, since more than one handshape were involved in that type of gesture and a detailed coding was meant to be provided. The term GIM was used in the *Comment* tier, and it was included in both the analysis and the results, except for those that concern movement and palm orientation (for details see 5.2.3 and 5.2.4).

Finally, in the same annotation software with sound turned on, the last selection procedure was to identify gestures that expressed agreement with the interlocutor but were not accompanied with speech. These stretches of non-speech were annotated as *silences* in the *Speech* tier. With regards to their characteristics (number of hands, movement etc.), gestures with non-speech were coded following exactly the same way as in gestures with speech.

4.4.3 Inter-rater reliability

A second coder for gesture and/or speech could not be secured. Therefore, it is acknowledged that the reliability of the present study is affected by the lack of having a second coder who could judge the data.

4.5 Analyses

All annotations were exported from ELAN and imported into Excel for quantification. The annotated data were analyzed quantitatively through a between comparison as the research questions designate (cf. section 3). Three main quantitative analyses were performed, namely a) the production of agreement utterances in speech, b) the manual gesture's production during speech, and c) the manual gesture's production during non-speech. All three analyses were realised under the scope of the target speaker's gender and the four conditions they were exposed to.

For manual gesture, the analysis was further focused on gestures' characteristics (number of hands, movement, palm orientation, handshape), and on their relation to agreement categories, in order to identify whether there are any specific choices depending on the form of gestures expressed in each of these categories. All quantitative analyses are based on descriptive statistics (raw frequencies, means and standard deviations, where appropriate). Qualitative examples to illustrate the trends are also given.

· C H A P T E R 5 ·

5. Results

5.1 Speech

5.1.1 Overview

Speech produced by the eight target speakers expressing agreement across the four social conditions was first examined. A total of 237 utterances of agreement was identified during the coding, 126 produced by female and 111 by male target speakers. The distribution of the produced utterances across the four different conditions can be seen in Table 4. Table 5 shows the mean of agreement utterances' frequency and the standard deviation of females and males across the conditions. The highest number of agreement utterances is observed in the UM condition (n = 44 by female speakers, 36 by male speakers) and the lowest in the FaM condition (n = 20 by females, 18 by males) for both male and female target speakers. Despite the high frequency in UM, it is the condition where the greater variation was found in both genders (SD = 11.92 in females, SD = 5.35 in males). Male speakers produced more utterances of agreement in the unfamiliar conditions (M = 8 in UF, M = 9 in UM). In contrast, females showed no preference towards either the gender or the degree of familiarity. Most utterances of agreement were uttered in the UM and in the FaF condition. Lastly, the only condition where males produced more sentences of agreement than females was UF.

Table 4. Agreement utterances (raw numbers and aggregated percentages) produced per condition by females and males. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

CONDITIONS	# (%) PRODUCED BY FEMALES	# (%) PRODUCED BY MALES
FaF	37 (29%)	25 (23%)
FaM	20 (16%)	18 (16%)
UF	25 (20%)	32 (29%)
UM	44 (35%)	36 (32%)
TOTAL	**126 (100%)**	**111 (100%)**

Table 5. Mean frequency and standard deviation of agreement utterances produced by the two genders across the conditions. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

	FEMALES				MALES			
CONDITIONS	FaF	FaM	UF	UM	FaF	FaM	UF	UM
MEAN FREQUENCY (SD)	9.25 (1.5)	5 (3.46)	6.25 (3.4)	11 (11.92)	6.25 (2.5)	4.5 (2.65)	8 (2.71)	9 (5.35)

5.1.2 Agreement categories

Table 6 shows the distribution of the agreement categories across gender and familiarity conditions.

Table 6. Distribution of agreement categories (raw frequencies) across the four conditions and speaker's gender. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

	FEMALES				MALES				
SPEECH CATEGORIES	FaF	FaM	UF	UM	FaF	FaM	UF	UM	TOTAL
Affiliative Comment	0	0	0	2	3	0	0	1	**6**
Clarification	0	1	0	0	0	1	0	1	**3**
Confirmation	22	12	18	30	12	11	24	19	**148**
Explanation	2	0	0	1	1	1	0	0	**5**
Interjection	1	0	0	0	0	0	0	0	**1**
Negative Agreement	0	1	1	3	1	0	0	0	**6**
Reintroduction	1	1	1	1	0	0	0	1	**5**
Repetition	8	0	1	1	1	2	3	3	**19**
Rephrasing	0	4	2	0	4	2	3	4	**19**
Supplementation	3	1	2	6	3	1	2	7	**25**
TOTAL	**37**	**20**	**25**	**44**	**25**	**18**	**32**	**36**	**237**

i. Affiliative Comment

Affiliative Comments were expressed in different ways by male and female speakers. For males, comments came as condemnation that included a stronger evaluation (upgrade). The condemnation constituted an agreement since it confirmed the disapproval of the interlocutor towards a point of view (see [11]). On the other hand, females used comments as supportive utterances of approbation denoting the taste for their interlocutor's view (see [1], Table 2 in 4.4.1).

[11] P09 (FaF): *Ή το άλλο, «δεν τρώω το γάλα επειδή προέρχεται από…»*
'Or the other, «I don't eat milk because it comes from»'

→ P06 (M): *Καμία λογική.*
'No sense.'

ii. Clarification

Two of the clarification utterances included the lexical item *εννοείς* ('you mean') with an example provided in [2] (Table 2).

iii. Confirmation

Confirmation was by far the most frequent category used by both female (n = 82) and male (n = 65) target speakers compared to the other speech categories. The majority of the confirmative utterances were produced in UM by females and in UF by males. Supportive minimal responses such as *ναι* ('yes'), *σίγουρα* ('definitely'), *ακριβώς* ('exactly'), *πράγματι* ('indeed'), *σωστό* ('right'), *αυτό* ('that's it'), *μμμ* ('mmm')[8], etc., were mostly used by the speakers in order to express confirmation. Males seemed to be briefer in their confirmative responses. Out of the 65 confirmative utterances, 25 included the adverb *ακριβώς* ('exactly') which was appeared in one-word form, in the repetitive form *ακριβώς, ακριβώς* ('exactly, exactly') and in combination with *ναι* ('yes'), *μπράβο* ('right') and *αυτό* ('that's it'). *Εννοείται* ('certainly'), *συμφωνώ* ('I agree'), *το ίδιο λέμε* ('we say the same thing'), *ναι αυτό* ('yes, that's it') or simple *ναι* ('yes') in either one-word or repetitive form (*ναι, ναι, ναι,* 'yes, yes, yes') are additional examples of confirmative utterances produced by male speakers. One of those included a downgraded evaluation term (*μπορεί ναι*, 'might be') which is considered to indicate weak agreement (Pomerantz, 1975), while in other cases upgraded evaluation was found in phrases such as *συμφωνώ απόλυτα* ('I absolutely agree'). In four cases they confirmed what the interlocutor had said by a simple *μμμ* ('mmm').

[8] *Ναι* ('yes') and *μμμ* ('mmm') were not observed to be produced with an exclamatory way and that is why they have not been categorised in Interjections.

On the other hand, females used longer sequences. In utterances such as *ναι, και εγώ αυτό έλεγα* ('yes, that's what I was saying, too') or *ναι, και εγώ αυτό πιστεύω* ('yes, that's what I believe, too') women used 'yes' as a confirmation to the antecedent statement followed by a sentence that indicates the same evaluation through the marker 'too' (Pomerantz, 1984). In such utterances, women show their willingness to engage themselves in their interlocutor's preceding statement. Emphatic adverbs (*ισχύει <u>άπειρα</u>*, 'it is <u>infinitely</u> true'/*συμφωνώ <u>απόλυτα</u>*, 'I <u>absolutely</u> agree') included in confirmations denote an upgrade agreement that, according to Pomerantz, is considered as a strong agreement type (1984). Downgrade was also found once in females, in the phrase *ναι, <u>δεν ξέρω</u>, και εγώ αυτό* πιστεύω ('yes, <u>I don't know</u>, that's what I believe, too'). As for monolectic forms, data showed a female preference for the words *αυτό* ('that's it'), *πράγματι* ('indeed'), *ισχύει* ('true') and *καλά ναι* ('obviously').

iv. Explanation

Explanation was one of the minor agreement categories with only five explanatory utterances produced by both females and males. In two utterances, rephrasing of the interlocutor's statement preceded the explanatory phrase.

v. Interjection

One female target speaker produced an interjection of agreement in FaF. As it can be seen in [5] (Table 2) she expresses her affirmation with an exclamation.

vi. Negative agreement

Lastly, *Negative Agreement* was mostly used by females, and mostly in UM. One male produced a negative agreement utterance in FaF (see [6], Table 2). Negative agreement utterances included phrases such as *ούτε εγώ* ('neither do I') or *και εγώ δεν συμφωνώ* ('I don't agree as well').

vii. Reintroduction

Reintroduction was expressed through the rephrasing (see [7], Table 2) or repetition (see [8]) of a phrase that the interlocutor had produced during the elaboration of his/her thought. In two utterances of Reintroduction, one produced by a female and one by a male target speaker, *upgrade* was found. In [12], the female target speaker reintroduces her interlocutor statement thirty seconds later, by repeating it and incorporating an upgraded evaluative term ('we should <u>definitely</u>'). Females tended to use reintroduction more than men.

[12] P02 (UF): …(00:33) *θα μπορούσαμε όλοι να μειώσουμε το κρέας.*
'…(00:33) we could all reduce meat.'

→ P01 (F): …(00:43) *εγώ πιστεύω ότι σίγουρα θα έπρεπε να μειώσουμε το κρέας* …

'…(00:43) I believe that we should definitely reduce meat…'

viii. Repetition

Repetition was the third most frequently used agreement category. Confirmative lexical items were often conflated with repetitive phrases. Males tended to incorporate a lot of confirmative words either before or after the lexical item that was repeated as in [8] (Table 2). In contrast, females used to repeat a word itself, often accompanied by 'yes', or they incorporated upgraded evaluative terms in the repeated item (see [13]). Most repetitions were produced by females in the FaF condition.

[13] P18 (FaF): … *έχουν συνηθίσει έτσι*

'… they are in the **habit** of that way'

→ P16 (F): *Είναι μεγάλη συνήθεια.*

'It's a great **habit**'.

P18: *Είναι και πολύ μεγάλη αλλαγή.*

'It is also a big **change**.'

→ P16: *Είναι αλλαγή ζωής.*

'It's a **change** of life'.

ix. Rephrasing

The only agreement category in which males produced overwhelmingly more utterances than females was that of *Rephrasing*. In the way of repetition, males used many confirmative forms in addition to the modified sequence (see [9], Table 2). Females tended to use simpler rephrased utterances except for one, where an upgraded evaluative item was intervened.

x. Supplementation

In terms of frequency, *Supplementation* was second most frequent category. In most cases, the anticipated supplementation initiated with the confirmative *ναι* ('yes'), *καλά* ('right') or *πραγματικά* ('indeed') and it was accompanied by the conjunction *και* ('and') as in [10] (Table 2). In three utterances, one produced by a female and two by a male target speaker, repetition of the interlocutor's last phrase preceded the supplementary item as in [14]. In males, one utterance expressing upgrade was found. No differences were identified between the two genders. However, both genders used more supplementary sentences in the UM condition.

[14] P15 (UF): *Κι όχι μόνο στη διατροφή, σε πολλούς τομείς*…

'And not only in nutrition, but <u>in many</u> sectors'

→ P11 (M): *Σε πολλούς, και στην υγεία, και αυτό.*

'In many, **and in health**, and that.'

5.2 Gesture production with speech

5.2.1 Gesture frequency

In 237 stretches of agreement, 85 manual gestures were identified. Since speech and gesture are considered to be an integrated system, the amount of speech may affect the number of gestures a speaker produces (Gullberg, 2010). Therefore, the gesture rate was also computed (number of manual gestures divided by the number of agreement utterances). Table 7 displays the raw number of manual gestures, the raw number of agreement utterances across the conditions, as well as the gesture rate.

Table 7. Number of agreement utterances and manual gestures produced across the conditions by the two genders, and gesture rate per condition. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
AGREEMENT UTTERANCES	37	20	25	44	**126**	25	18	32	36	**111**
MANUAL GESTURES	15	5	12	26	**58**	5	6	3	13	**27**
GESTURE RATE	**0.4**	**0.25**	**0.48**	**0.59**		**0.2**	**0.33**	**0.09**	**0.36**	

Table 8 illustrates the mean of gestures' frequency across the conditions by females and males. Standard deviation (SD) is also provided to give information about the degree of variation from the mean of each target speaker's gestural production within each condition.

Table 8. Mean frequency and standard deviation of manual gestures produced by the two genders across the conditions. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

	FEMALES				MALES			
CONDITIONS	FaF	FaM	UF	UM	FaF	FaM	UF	UM
MEAN FREQUENCY (SD)	3.75 (2.06)	1.25 (0.5)	3 (1.83)	6.5 (4.93)	1.25 (0.96)	1.5 (0.58)	0.75 (0.96)	3.25 (0.96)

Both females and males produced far more manual gestures in the UM condition (M = 6.5 in females, M = 3.25 in males), which coincides with the highest production of agreement utterances by both genders. However, there is a higher variation in UM in the groups with female speakers (SD = 4.93) than in groups with a male target speaker (SD = 0.96). The next condition with a high rate of gesture production in females was the FaF condition (n = 15, M = 3.75), while in males was that of FaM (n = 6, M = 1.5). The female data look notably different in this condition. FaM was the condition with the lowest gesture production and with a great difference compared to the UM condition that was the highest one. Females and males match in the mean frequency of gestures in FaM (M = 1.25, SD = 0.5 in females, and M = 1.5, SD = 0.58 in males).

When the mean gesture rate is computed by gender, a difference between females and males occurs. Female speakers on average produced 0.46 gestures per agreement utterance, whereas male speakers on average produced 0.24 gestures. The individual gesture rates also reveal much variation, both in female and male speakers across the conditions (females: 0.59-0.25, males: 0.36-0.09).

5.2.2 Gesture characteristics: Number of hands

Table 9 illustrates the raw number of manual gestures that were produced with one and two hands by females and males across the four conditions.

Table 9. Raw number of one- and two-handed manual gestures across the conditions and speaker genders. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
One-handed	13	4	11	22	**50**	3	5	3	9	**20**
Two-handed	2	1	1	4	**8**	2	1	0	4	**7**

Both females and males show a clear preference for using one of their hands when they gesture. Gestures were more one-handed across all conditions, and especially in UM by both genders (see Figure 6). Two-handed gestures were used by both genders to the same extent, again, especially in the UM condition. For a view of the distribution of handedness across agreement categories, see Appendix D, Table 18.

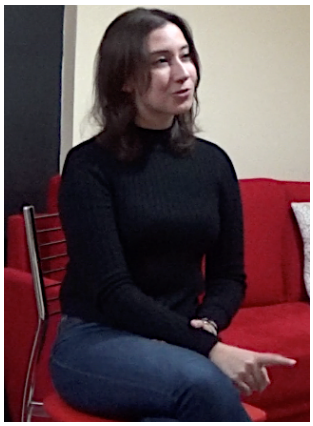

Figure 6. Example of a one-handed manual gesture performed by a female target speaker in the Unfamiliar Male condition.

5.2.3 Gesture characteristics: Movement

Table 10 presents the spatial excursions that the target speakers expressed across the conditions.

Table 10. Raw number of gestural movement types across the conditions and speaker genders.[9]
FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male, SFM=Sagittal Forwards Movement, STM=Sagittal Towards Movement, LM=Lateral Movement, VM=Vertical Movement, RM=Rotational Movement, CM=Cyclical Movement, ORUM=Oblique Right Upwards Movement, OLUM=Oblique Left Upwards Movement.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
CM	-	-	1	2	**3**	-	-	-	-	**0**
LM	3	-	1	2	**6**	1	2	-	2	**5**
OLUM	-	-	-	-	**0**	-	-	-	1	**1**
ORUM	-	-	-	1	**1**	-	-	-	-	**0**
RM	-	-	2	3	**5**	-	-	1	4	**5**
SFM	7	2	3	8	**20**	1	4	-	2	**7**
STM	-	-	-	5	**5**	-	-	-	1	**1**
VM	5	2	4	2	**13**	1	1	2	3	**7**

It is clear from Table 10 that *Sagittal Forwards Movement* and *Vertical Movement* are the most common movements types for agreement in both genders (see Figure 7). However, their distribution across the conditions is not constant for females and males. The former performed *Sagittal Forwards* in UM and FaF more frequently, and *Vertical* when they interacted with females. The latter used most of the *Sagittal Forwards* gestures in FaM, and *Vertical Movement* was mainly found in UM. We see *Sagittal Forwards* and *Vertical Movement* with Confirmation in females (see Appendix D, Table 19). Both females and males expressed clearly a variety of spatial excursions in the UM condition, but, overall, females used more different spatial excursions for gesturing than males did.

[9] The movements produced in GIM have not been included in this table, since more than one movement is involved in GIM. Given that one movement corresponds to one gesture, two movements of a GIM would refer to two different gestures, while GIM have been considered as one gesture (for a description of GIM see 5.2.5).

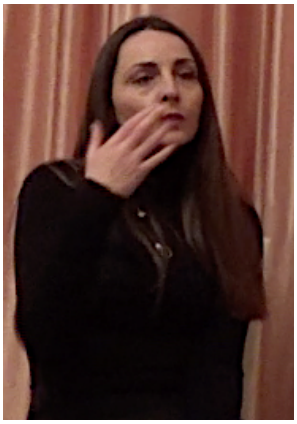

Figure 7a. Example of a Sagittal Forwards Movement produced by a female target speaker.

Figure 7b. Example of a Vertical Movement produced by a male target speaker.

5.2.4 Gesture characteristics: Palm Orientation

Table 11 presents the distribution of palm orientation across the conditions by both genders.

Table 11. Raw number of palm orientation produced by two genders across the conditions.[10]
FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
PD	2	2	3	6	**13**	-	-	1	2	**3**
PDO	-	-	1	2	**3**	1	1	-	-	**2**
PF	1	-	1	2	**4**	-	-	-	-	**0**
PS	-	-	-	1	**1**	-	-	-	1	**1**
PSL	2	-	3	2	**7**	-	-	-	1	**1**
PSR	3	-	1	1	**5**	-	-	-	2	**2**
PT	-	-	1	1	**2**	-	1	-	1	**2**
PU	5	2	1	5	**13**	1	1	-	1	**3**
PUO	1	-	1	3	**5**	2	3	2	5	**12**

[10] The orientations produced in GIM have not been counted for this table, since some GIM included two different orientations and some included one. Thus, the number of orientations involved in GIM could not be counted given that GIM were considered as one gesture (for a description of GIM see 5.2.5).

The results indicate that *Palm Up*, *Palm Down*, and *Palm Up Oblique* are the most common orientation types (Figure 8), but they are differently distributed across genders. Females show a preference towards *Palm Up* (*n* = 13) and *Palm Down* (*n* = 13), while males mainly produce *Palm Up Oblique* (*n* = 12). As for variety, the highest degree of diversity in orientations was observed in UM for both genders. For a detailed view of the distribution of palm orientation types across the agreement categories see Appendix D, Table 20.

Figure 8a. The Palm Up orientation as performed by a female target speaker.

Figure 8b. The Palm Down orientation as performed by a female target speaker.

Figure 8c. ThePalm Up Oblique orientation as performed by a male target speaker.

5.2.5 Gesture characteristics: Handshape

Finally, Table 12 summarizes the different handshapes found in females and males' across the conditions.

Table 12. Raw number of handshapes produced by two genders across the conditions.
FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male, IFE=Index Finger Extended, OH=Open Hand, CH=Close Hand, G=Grappolo, R=Ring, FS=Fingers Spread, PA=Palm Angular, GIM=Gestures with Internal Movement.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
CH	-	-	-	1	**1**	-	-	-	-	**0**
FS	-	-	1	-	**1**	1	-	-	-	**1**
G	1	2	2	-	**5**	-	-	-	-	**0**
GIM	1	1	-	3	**5**	1	-	-	-	**1**
IFE	3	1	1	8	**13**	-	1	-	2	**3**
OH	10	1	7	11	**29**	3	5	3	10	**21**
PA	-	-	-	2	**2**	-	-	-	1	**1**
R	-	-	1	1	**2**	-	-	-	-	**0**

The two most frequent handshapes were the *Open Hand* (*n* = 50) and the *Index Finger Extended* (n= 16) in both speaker groups (Figure 9). Greater variety was observed in UF and UM by females, showing that unfamiliarity was an effect in terms of variety. Females also produced more handshape types overall than males (CH, G, R). Males produced almost half the number of different handshapes compared to females. For an illustration of the less frequently used handshapes see Appendix E.

Figure 9a. Illustration of the Index Finger Extended handshape, produced by a female target speaker.

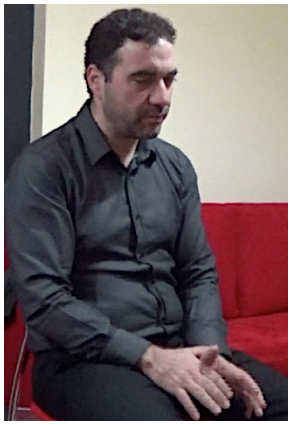

Figure 9b. Illustration of the Open Hand handshape, produced by a male target speaker.

If handshapes are considered in relation to speech categories, a greater variety is observed in Confirmation and Supplementation which bring together five and four different handshapes correspondingly (see Appendix A, Table 21). In Repetition, nine gestures were produced, all with an *Open Hand*. As regards the speech categories with fewer utterances, it worth mentioning that in Reintroduction all utterances were accompanied by manual gestures, while in Clarification none was produced. In females particularly, gestures tend to be open-handed (OH) in FaF, UF, and UM, overwhelmingly in Confirmation (see Appendix A, Table 21). The *Index Finger Extended*, that was the second most frequently used handshape, was mainly found in UM in *Confirmation* and in Affiliative Comment in equivalent amount (n = 3), and it was often accompanied with the word *αυτό* ('that'). In males, massive use of a specific handshape in correlation to both a condition and an agreement category was not highlighted, except for the *Open Hand* in UM in Supplementation (n = 4).

5.2.5.1 Gestures with Internal Movement (GIM)

GIM were relatively rare and mainly produced by females (n = 5, males = 1). Two of them were similar in handshape and movement. The first GIM, produced in a Negative Agreement utterance, starts with a *Sagittal Towards* the speaker *Movement*, *Open Hand/Palm Towards*, and proceeds to a *Sagittal Forwards Movement*, *Palm Angular/Palm Down*. The second consists of an *Index Finger Extended* which moves sagittally towards the speaker with the *Palm Down Oblique* and then cyclically with the *Palm Forwards*, as it is illustrated in Figure 10. During the stroke the index finger that is extended moves vertically with a repeated up-down movement. The gesture was found in a confirmative utterance. Starting with an *Open Hand/Palm Up* that moves vertically which then rotates to an *Open Hand/Palm Side Rightwards* that moves laterally, the third was produced in an utterance that expressed Supplementation. Similar to the first, the fourth accompanied speech that indicated negative agreement. An *Open Hand/Palm Down* that moves laterally ends to an *Open Hand/Palm Side Rightwards* with a *Rotational Movement*. The fifth occurred with a reintroducing utterance, and it is quite similar to the second one. An *Index Finger Extended* starts with a *Sagittal Forwards Movement*, *Palm Up* followed by a *Cyclical Movement* where the palm is oriented towards the speaker in the beginning and rightwards in the end. The last gesture with internal movement, which was produced by a male speaker, consists of an *Open Hand/Palm Up Oblique* that moves oblique right upwards and then oblique right downwards. Since that was the only GIM in which both handshape and orientation were kept constant, it seems that females' gestures appear greater complexity.

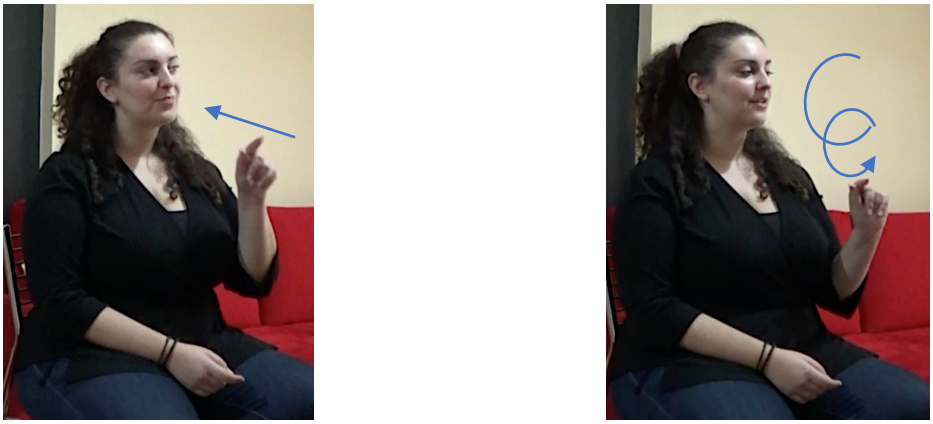

Figure 10. Example of a Gesture with Internal Movement, which starts with an Index Finger Extended/Palm Down Oblique, with a Sagittal Towards Movement and ends in an Index Finger Extended/Palm Forwards, with a Cyclical Movement.

5.2.5.2 Further reflection on handshapes and orientation

Many researchers consider the orientation of the *Open Hand* to indicate its meaning and use, and that way different families have been determined by the combination of the *Open Hand* and the orientation it has, with the *Palm Up* and the *Palm Down* families being the most known (Kendon, 2004; Müller, 2004; Harrison, 2009a; Cooperrider et al., 2018). If we focus on the orientation of the *Open Hand* gestures in the present data, clear differences can be observed. Males showed a clear preference for *Palm Up Oblique* gestures ($n = 12$) while the numbers for the rest orientations ranged between one and three productions (PU = 3, PD = 2, PDO = 1, PS = 1, PSR = 1, PT = 1). The distribution of the *Open Hand* gestures across the different orientations was more homogenous in females. Females used mostly *Palm Up* gestures ($n = 8$), six *Palm Down*, four *Palm Up Oblique* and four *Palm Side Leftwards*, three *Palm Side Rightwards* and three *Palm Forwards*, and lastly two *Palm Down Oblique*. It is noteworthy that females shaped more *Palm Down* and *Palm Down Oblique* gestures than males. Examples of *Palm Up Oblique* and *Palm Down Open Hand* gestures are displayed in Figure 11.

Figure 11a. Example of an Open Hand/Palm Up Oblique manual gesture produced by a male target speaker.

Figure 11b. Example of an Open Hand/Palm Down manual gesture produced by a female target speaker.

The *Index Finger Extended* gesture, that is mostly known to be oriented with the palm down or vertical[11] (Kendon, 2004), was realised in almost all possible orientations of the palm (PU, PD, PDO, PT, PF, PSL, PSR, PS). Most of them were illustrated with *Palm Up*, *Palm Down* and *Palm Side Leftwards*. Figure 12 illustrates an *Index Finger Extended* gesture/*Palm Up* gesture accompanying the word *αυτό* ('that') that is produced in a confirmative utterance.

Figure 12. Example of the Index Finger Extended produced in parallel with *αυτό* ('that').

'The one that you were saying'
P41: *Αυτό που έλεγες*
| ********** | [12]

[11] The vertical palm has been further distinguished in PSR and PSL in this study, so that the exact orientation of the palm to be clear.
[12] Transcription for gesture follows Kendon's symbols (2004, p. 363): | marks gesture phrase boundaries, *** indicates a stroke, *** indicates a post-stroke hold.

With regards to *Grappolo*, it is noteworthy that, contrary to other languages such as Italian where studies have revealed that the palm in *Grappolo* gestures faces upwards (Kendon, 2004), data revealed that *Grappolo* was formed in three different orientations (PU, PD, PT). In Figure 13, the female target speaker expresses two strokes of *Grappolo*, each with different orientation (13a: PD, 13b: PT) within the same utterance of Reintroduction.

Figure 13a. Example of the Grappolo with the Palm Down.

Figure 13b. Example of the Grappolo with the Palm Towards.

indeed, it is the critical look

P36: *όντως, είναι η επικριτική ματιά*

|****| |**********|

5.3 Gesture production in non-speech

5.3.1 Gesture frequency

Finally, manual gestures sometimes expressed agreement in the absence of speech. Forty-four stretches of silence in total were identified to include non-verbal behavior by the target speakers. Among these, thirteen included manual gestures. Their distribution across the four conditions is presented in Table 13.

Table 13. Raw number of manual gestures across the conditions in non-speech produced by two genders. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

	FEMALES				MALES			
CONDITIONS	FaF	FaM	UF	UM	FaF	FaM	UF	UM
MANUAL GESTURES	2	1	2	2	2	2	1	1
TOTAL	**7**				**6**			

No differences were found concerning the number of gestures produced by females and males, nor across conditions.

5.3.2 Gesture characteristics: Number of hands

Table 14 shows the distribution of handedness across speaker gender and conditions. The numbers are very small, but there seems to be a more even distribution across one- and two-handed gestures than with speech.

Table 14. Raw number of one- and two-handed gestures in non-speech across the conditions in females and males. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
One-handed	-	1	2	1	**4**	2	-	1	-	**3**
Two-handed	2	-	-	1	**3**	-	2	-	1	**3**

5.3.3 Gesture characteristics: Movement

Table 15 presents movement types of gestures in the absence of speech across speaker genders and conditions. A greater variety of movement was observed in females, while males showed a clear preference for *Rotational Movement* ($n = 5$). No differences in distribution across the conditions was found.

Table 15. Raw number of gestural movement types produced by two genders across the conditions in non-speech. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male, SFM=Sagittal Forwards Movement, LM=Lateral Movement, VM=Vertical Movement, RM=Rotational Movement.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
LM	1	-	-	1	**2**	-	-	-	-	**0**
RM	1	-	2	-	**3**	1	2	1	1	**5**
SFM	-	-	-	1	**1**	1	-	-	-	**1**
VM	-	1	-	-	**1**	-	-	-	-	**0**

5.3.4 Gesture characteristics: Palm Orientation

Table 16 shows the palm orientation types during non-speech across speaker genders and conditions. Females expressed manual gestures with *Palm Up* and *Palm Up Oblique*, while males presented a greater variety (PUO, PS, PDO). No differences in distribution across the conditions was observed.

Table 16. Raw number of palm orientation across the conditions and two genders in non-speech. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male, PU=Palm Up, PUO=Palm Up Oblique, PDO=Palm Down Oblique, PS=Palms Side.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
PDO	-	-	-	-	**0**	-	-	1	-	**1**
PS	-	-	-	-	**0**	-	2	-	-	**2**
PU	2	-	1	1	**4**	-	-	-	-	**0**
PUO	-	1	1	1	**3**	2	-	-	1	**3**

5.3.5 Gesture characteristics: Handshape

Lastly, the different handshapes that were produced in non-speech by two genders across the four conditions are presented in Table 17.

Table 17. Raw number of handshapes produced by two genders across the conditions in non-speech. FaF=familiar female, FaM=familiar male, UF=unfamiliar female, UM=unfamiliar male, IFE=Index Finger Extended, OH=Open Hand, FS=Fingers Spread, CF=Crossed Fingers.

	FEMALES					MALES				
CONDITIONS	FaF	FaM	UF	UM	TOTAL	FaF	FaM	UF	UM	TOTAL
CF	-	-	-	-	**0**	-	2	-	-	**2**
FS	-	-	-	-	**0**	1	-	-	-	**1**
IFE	-	1	-	-	**1**	-	-	-	-	**0**
OH	2	-	2	2	**6**	1	-	1	1	**3**

Both genders mainly produced gestures with *Open Hand* (n = 9) and equally in FaF, UF and UM (for an example see Figure 13a). An illustration of *Crossed Fingers* is presented in Figure 14b, which was the only hand shape produced in non-speech and not in speech.

Figure 14a. The Open Hand handshape as produced in non-speech by a male target speaker.

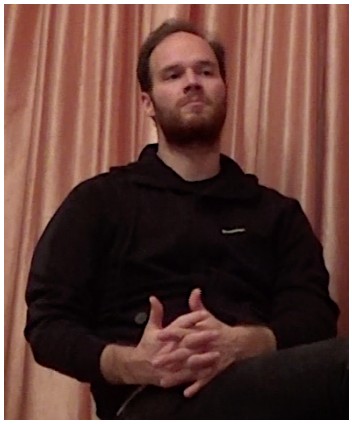

Figure 14b.. The Crossed Fingers hand shape as produced in non-speech by a male target speaker.

5.4 Summary

The results of this study clearly showed that, in general, females produced more agreement utterances and also more manual gestures than males. The UM was the most productive condition for both genders in terms of speech and gestures.

Concerning speech, agreement utterances were mainly expressed through Confirmation, Supplementation, Repetition and Rephrasing. In most of the agreement categories females produced more utterances, except for Repetition and Supplementation, where equal productions were found by both genders, and Rephrasing and Affiliative Comment, in which males' utterances were double the number of females. With regards to the conditions, females were more expressive in UM and in FaF, whereas males in UM and in UF. Thus, unfamiliarity that had an effect on males' verbal behavior. The fewest production of agreement utterances was observed in FaM in both genders.

Moving to gesture frequency with speech, although the results are in parallel with those in speech for females, in males there is a noticeable differentiation. It was UM and FaM that provoked higher levels of manual gestures, showing that there was a gender effect for males. In contrast, females did not reveal a preference towards any of the two variables, with UM and FaF being the conditions with the most gestural activity.

Turning to gesture characteristics, manual gestures tended to be one-handed in both genders, while the highest number of two-hands gestures was observed in UM. As for the type of movements, both genders showed a preference towards Sagittal Forwards and Vertical Movement with the distribution across the conditions to be disparate. Palm Up, Palm Up Oblique and Palm Down were the most frequently used types of palm orientation. Females mostly produced Palm Up and Palm Down gestures, while males used, almost unanimously, Palm Up Oblique, as we see them especially in UM. Lastly, the Open Hand and the Index Finger Extended were the most common used handshapes. Males predominantly used the Open Hand, especially in UM, and females the Open Hand and the Index Finger Extended, mainly found in UM and FaF.

Finally, gesture frequency was much lower in non-speech compared to speech. Females and males produced approximately the same number of gestures in non-speech. No noticeable differences were found in terms of gestures' configuration between the two genders nor across the conditions.

· C H A P T E R 6 ·

6. Discussion

The present study examined how female and male Greek speakers express agreement with their interlocutors depending on gender and familiarity in speech and in manual gestures, either with or without accompanying speech. There are three main findings. First, females and males produce approximately the same number of agreement utterances, with similar forms. Both indicate agreement with the interlocutor more frequently when the interlocutor is an Unfamiliar Male. Second, females use twice as many co-speech manual gestures as males on average. Despite this difference, they both produce most gestures when they interact with Unfamiliar Males just as in speech. Lastly, the Open Hand/Palm Up and Palm Up Oblique are the most frequently used manual gestures during both speech and non-speech, showing that there is a pattern for the gestural expression of agreement in Greek.

Starting with agreement in speech and the between-genders comparison, the results generally reveal more similarities than differences. Females produce slightly more agreement utterances than males, but the difference is not great. Both genders express agreement mainly through confirmation. Considering Pomerantz's three-grade scale (1984), *upgrade* is found slightly more frequently in females, but also in males, contradicting previous research that has shown females to continuously use upgrades and males more frequently downgrades (Lakoff, 1973; Makri-Tsilipakou, 1991). The findings generally challenge results in the literature, where the overall view is that women are more easily supportive by agreeing with their interlocutors than men are, with the latter being neutral and conservative (Johnson et al., 1996; Makri-Tsilipakou, 1991; Roger, 1987; Zimmerman & West, 1975). The speech data show that both genders are verbally productive when agreeing, and conservatism is observed in males in confirmation only, where they tend to produce shorter confirmative utterances than females do. Possible reasons for the discrepancy between the previous and the present research could be the temporal distance of the studies or changes in social stereotypes.

The findings also do not support the predictions derived from previous research (Coates, 1986; Makri-Tsilipakou, 1994b; McLchlan, 1991; Moskowitz, 1993; Mulac et al.; 1988;), according to which women and men tend to be more affiliative with familiar and unfamiliar females. Makri-Tsilipakou (1994b) has shown that Greek women produce an equal number of affiliative interventions to both genders, and men tend to be more affiliative towards women recipients. However, that was not the case in the present study. Instead, the results suggest that both genders

are more likely to agree with Unfamiliar Males, followed by Familiar Females for females, and Unfamiliar Females for males. It therefore seems to be a matter of unfamiliarity effect in males, whereas similar consistency in one of the two variables is not reported for females. Rather, it seems to be a combination of gender and familiarity that leads females to an increased agreement behavior. Across speech categories, the results are in line with these of Makri-Tsilipakou (1994a) when it comes to Confirmation, since males produce more confirmative sentences, among which most are minimal responses, when interacting with females.

Turning to gestures produced with agreement utterances, the predictions concerning speaker genders are partly met. Females use almost twice as many manual gestures as males do. Support for the predominance of gesture in female production comes from other gender-focused studies, showing that females are more active gesturally especially in affiliative contexts (Exline et al., 1965; Helweg-Larsen et al., 2004; Kramer, 1997). Results on males' manual gestures follow the literature and the predictions, even though gesture production departs from speech production. Considering that speech and gestures are an interconnected system, you could expect males to produce the same number of manual gestures. However, only one quarter of males' agreement utterances was accompanied with gestures, whereas in females hand movements were produced in half of their speech. What could explain this difference? Social stereotypes and role models concerning genders' behavior in Greek society could be possible reasons, and a future study that should approach this issue qualitatively could shed light on it.

Moving to gestures' formal configuration the findings again highlight mainly similar behaviors across the genders. There is a strong tendency in both genders to produce one-hand gestures, using a Sagittal Forwards Movement, with either a Palm Up or a Palm Up Oblique, and an Open Hand. However, this study did not investigate whether these forms come together in one typical manual gesture. Focusing on movement and the dominance of the Sagittal Forwards Movement, it is argued that this movement type acts as an interactive component when gestures indicate agreement in speech, which is in line with previous research having studied the interactive function of gestures (Bavelas et al., 1992). In terms of orientation and handshape, the results reveal differences between the two genders, and challenge previous research, that, even though has not examined agreement, has provided an overview of the most common handshapes in women and men in general contexts (Friesen et al., 1979). Females produce an equal number of Palm Up and Palm Down manual gestures, while males use Palm Up Oblique. These data offer a new insight on the Palm Down family and its context of use. Most previous studies suggest that palm down gestures are used in contexts of negation and interruption (Calbris, 2003; Harrison, 2009a; 2014), which means that we would expect them to occur in disagreement rather in agreement utterances. The use of Palm

Down in affiliative expressions supports Kendon's claim for its production in positive assessments (2004). The results on handshapes highlight that there is a manual preference for both genders, and a pattern for expressing agreement, namely the Open Hand gesture. The dominance of Palm Up and Palm Up Oblique orientation in Open Hand gestures is not surprising given previous studies (Bavelas et al., 1992). Nevertheless, the noticeable number of Index Finger Extended gestures in females and the overwhelming dominance of Open Hand/Palm Up Oblique in males, stand in contrast to the study of Friesen et al. (1979), where it is argued that index finger extended is males' territory.

Interestingly, the Index Finger Extended was often accompanied by the word *αυτό* ('that'). The lexical item *αυτό* ('that') belongs to the personal and deictic pronouns (Babiniotis, 2017), but in context of agreement it is used with the meaning *right, exactly*. The speakers, probably influenced by its use for indicating deixis, form the Index Finger Extended handshape when they utter *αυτό* ('that') to express agreement and not in pointing at an object which is considered to be the main use of the Index Finger Extended. The data thus reveal that this handshape can be used as a gesture for indicating metaphorical deixis, with the target of pointing being the sentence of the interlocutor or even the interlocutor her/himself.

Turning to the distribution of manual gestures across the conditions, the findings on gesture frequency are surprising as regards males. Gesture production was expected to correspond to speech production. The results nevertheless highlight an inconsistency in the Unfamiliar Female condition in males, since it is the condition with the second highest number of agreement utterances, but with the lowest number of hand movements. Males seem to be more expansive verbally, but restrained non-verbally. Moreover, in Familiar Males, males produced the second highest number of gestures, even though it was the condition with the weakest speech production. Speech and gesture are inversely proportional in these two conditions. In contrast, females are consistent in the production of speech and hand movements across the conditions. Notice that both genders produced far more manual gestures when speaking with Unfamiliar Males, contradicting the findings of Bente et al. (1998) who suggest that males produce more gestures with familiars, and that females are equally active with both familiars and unfamiliars.

Previous studies on agreement do not tell us about manual gesture characteristics. Starting with the number of hands, the distribution of one-hand and two-hands gestures is in accordance with the gestures' frequency across the conditions both in females and males. However, referring to movement, namely to Sagittal Forwards and Sagittal Towards Movement, the gesture data suggest that females tend to be more interactive through their manual gestures with Unfamiliar Males and Familiar Females, whereas males with Familiar Males. In addition, females seem to be affected by

the gender of the recipient, that is feminine, when it comes to Vertical Movement. In orientation and handshape, the highest numbers of the most frequently used kinds are found in the Unfamiliar Male condition for both genders, and in the Familiar Female for females. Overall, both genders but mainly females, present a variety of movements, orientations, and handshapes in the Unfamiliar Male condition, suggesting that a male, unknown addressee provokes non-verbal expressiveness. Despite the major types of handshapes, that are Open Hand and Index Finger Extended, the findings bring to surface new contexts of use for some handshapes, even though their presence is minor. Grappolo for example, even though it is met to function pragmatically in conversations (Kendon, 2004), was not known for its use in agreement contexts. At the same time, the identification of Gestures with Internal Movement and their usage provides a new interpretation of how agreement is indicated by Greek speakers non-verbally. Both the former and the latter emphasise a complementary way of expressing agreement in conversation. Specifically, except for the major handshape types that are found in the literature and replicate previous findings (Bavelas et al., 1992; Holler, 2009), the target speakers show that agreement can be accompanied with a variety of handshapes.

Finally, the analysis also examined manual gestures in the absence of speech. It is worth mentioning that noticeable differences are not observed between the two genders in terms of frequency, as during speech production. Moreover, there is no variation between one- and two-handed gestures, as in hand movements in speech. Rather, two-handed gestures are used equally often as one-handed gestures, probably suggesting that the use of two hands is increased due to the absence of speech. However, this is only a hypothesis that cannot be confirmed due to the limited production of hand movements in silence. Manual gestures that were produced in non-speech have quite similar configuration in both genders when it comes to orientation and handshape. What changes most, is the movement through which the gesture is realised, where females and mainly males show a preference towards the Rotational Movement. This movement in combination with the equivalent number of one-handed and two-handed gestures, as well as with the frequently used Open Hand/Palm Up, Palm Up Oblique may suggest an emblematic use for indicating common ground, equivalent to 'exactly'. Among the possible functions of gestures in non-speech (Gullberg, 2013), it more likely that the hand movements found in the data managed turn-taking. Target speakers seem to avoid interrupting their interlocutor, and thus they help him/her to hold the floor, but at the same time they find a way to express their agreement without intervening verbally.

6.1 General outlook and future work

Except for the results, the present study has endeavoured to provide a suitable methodology for studying both speech and gestures across controlled conditions. Since some past studies have investigated gestural activity in unstructured or semi-structured environments (Fusaro, 2011; 2014; Ickes & Barnes, 1978), that is putting cameras secretly in people's conversations or not providing instructions for what to do and discuss, it could be argued that the procedure followed during the present experiment could function as a disadvantage having an impact on the results. It is nevertheless shown here that elicited data do not depart from naturalistic data. Participants seemed to be very comfortable, and sensitive both to the conversational topic and the status of their interlocutor. Moreover, in any case where eliciting data could not be achieved, the stimulus would not be provided. That would cost data content, since a controversial discussion would not have been ensured. With regards to the analysis, a generalisation of the results could offer a more thorough insight into a broader population. Thus, inferential statistics should be applied in order for the findings to be consolidated.

This study is a suitable starting point for the investigation of gestures in Greek conversation but also for the examination of any gender differences in the production of manual gestures when agreeing cross-culturally. It thus paves the path for new fields of inquiry, that are either tightly or more broadly connected to the present topic.

Starting with the follow-up research, it concerns the examination of other gestural components. As clarified in section 2.2.1, gestures do not only refer to hand movements. Participants were seen performing head movements, facial expressions, shoulders and eye movements within the stretches of speech that indicated agreement. This gesture production involving other articulators could be a matter for future investigation, and, as mentioned in 2, there is already research that has focused on the study of head movements in agreement, since head nodding is considered to be widely used in agreement contexts (Fusaro et al., 2011; 2014; Guidetti, 2005; Morris, 1977). With gender and gestures being the focus, this study could also be applied in disagreement. Disagreement has been studied more systematically than agreement in terms of how it is expressed verbally (Edstrom, 2004; Kreutel, 2007; Myers, 1998; Price et al., 2002; Zimmerman & West, 1975;), but also non-verbally (Harrison, 2014; Kamunen, 2018). However, a detailed analysis of both manual gestures and other articulators' characteristics used in disagreement is still missing, whereas in Greek there are no hints of how the speakers gesture in such a context. An extension like this would allow a comparison between the gestural activity during agreement and disagreement in conversation.

Finally, in a broader sense, some aspects that would be interesting to be explored refer to the time alignment of gesture and speech or non-speech, and the alignment of gesture and prosody. It

would be worth examining the exact temporal relationship between gestures strokes and speech in agreement, since this could shed some light on which elements in speech are coordinated with agreement gestures. Similarly, the investigation of the connection between gesture and prosody in such a conversational context lacks, mainly in the domain of gender. Even though females and males were found to produce an almost equal number of agreement utterances, it was observed that their prosody differed, with females, for example, to seem more enthusiastic when agreeing, and thus expressing agreement phrases with a higher intonation than that of males. At the same time, with regards to gesture space, they were seen to use more exaggerated than restricted gestures. Thus, the connection between the amplitude of prosody and gesture could be a matter of investigation, since it has been argued that there is a correlation between these two components (Férre, 2014). Furthermore, a both psycholinguistic and sociolinguistic approach to the present topic, analysing speech and gesture qualitatively, could offer a deep insight into *why* the two genders behave differently and/or similarly depending on the conversational conditions. Previous gesture studies on gender have not answered that crucial question, but psycholinguistic and sociolinguistic research has detected gender differences in language development due to the social roles they have received (Gleason & Ely, 2002; Arhakis & Kondili, 2002). Lastly, a cross-linguistic study would provide information on whether or not gesture production interacts with any language patterns. Languages differ in terms of vocabulary, semantics, syntax and phonology, providing different options to the speakers for how to speak and consequently gesture. Sifianou (1989), for example, indicated several differences between English and Greek in telephone interactions, and Johnson (2006) found cross-cultural differences in agreement and disagreement in conversation.

· C H A P T E R 7 ·

7. Conclusion

This thesis examined the role of gender and familiarity on the production of speech and gesture associated with agreement in Greek conversation. The research focused on the influence of the interlocutors' gender and familiarity status on female and male speakers' verbal and non-verbal behavior, by assessing how agreement is expressed in speech, how manual gestures are produced either in the presence or the absence of speech, and what their characteristics are. The analyses offer deep insights into the relationship between speech, gestures, gender, and familiarity.

This study suggests that gender interacts with familiarity in the way the Greek speakers make specific choices for agreeing with the recipients and gesturing. The results highlight that both genders produce more speech and gestures with Unfamiliar Male interlocutors. Generally, the findings in speech replicate previous studies in Greek on the expression of agreement, but highlight more similarities than differences between the two genders and their verbal behavior. The gesture data, on the other hand, contradict most of the previous research in the domain of gender and familiarity, offering a new view on non-verbal behavior. Females and males present an important divergence in manual gesture frequency during speech, whereas in non-speech no specific differences are noticed. Lastly, this study contributes entirely new knowledge on the configuration of manual gestures in agreement utterances. Open Hand/Palm Up and Palm Up Oblique are the dominant manual gesture patterns in agreement expressed by Greek speakers.

Overall, the present study sheds new light on the question of how Greek speakers agree during a conversation by showing that the gender of the speaker as well as the gender and the familiarity status of the interlocutor affects their speech and gestures both in terms of frequency and form. Most importantly, the data offer an insight on the pragmatic and interactive gestures that Greek speakers use during a conversation when agreeing. The findings also bring to light new evidence, namely when it comes to gestures' characteristics, highlighting the value of studying gestures in conversation in parallel with gender and familiarity. Lastly, this study opens a line of inquiry on gestures in Greek, but it also paves the way for rigorous research on the interaction of gender, familiarity, and gestures in specific conversational aspects.

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Appendix A: Consent form

CENTRE FOR LANGUAGES & LITERATURE
LUND UNIVERSITY
PO BOX 201, 221 00 Lund, Sweden

Έντυπο συναίνεσης

Αποδέχομαι να συμμετάσχω εθελοντικά στην ερευνητική εργασία που διεξάγει η Σταματίνα Ρόζου, μεταπτυχιακή φοιτήτρια στο Πανεπιστημίου του Lund. Κατανοώ ότι η παρούσα μελέτη διεξάγεται προς συγκέντρωση δεδομένων στα πλαίσια της διπλωματικής διατριβής που εντάσσεται στον Τομέα της Νεοελληνικής Γλώσσας.

Αποδέχομαι ότι το βιντεοσκοπικό υλικό που θα συλλεχθεί κατά τη σημερινή μαγνητοσκόπηση μπορεί να χρησιμοποιηθεί για περαιτέρω ανάλυση στα πλαίσια της διπλωματικής διατριβής, η οποία διεξάγεται στο πλαίσιο του μεταπτυχιακό προγράμματος Languages and Linguistics: Specialization in Modern Greek.

Έχω λάβει γνώση ότι η συμμετοχή μου στην έρευνα είναι εθελοντική. Μπορώ να ακυρώσω τη συμμετοχή μου οποτεδήποτε και να αποσύρω τη συναίνεσή μου.

Το επιστημονικό υλικό διαφυλάσσεται εμπιστευτικά με βάση την εφαρμοστέα νομοθεσία. Η ανωνυμία μου είναι εγγυημένη. Το συλλεχθέν υλικό θα είναι αναγνωρίσιμο με τη χρήση κωδικού αντί ονόματος και θα είναι διαθέσιμο αποκλειστικά στην Σταματίνα Ρόζου και στους επόπτες καθηγητές της.

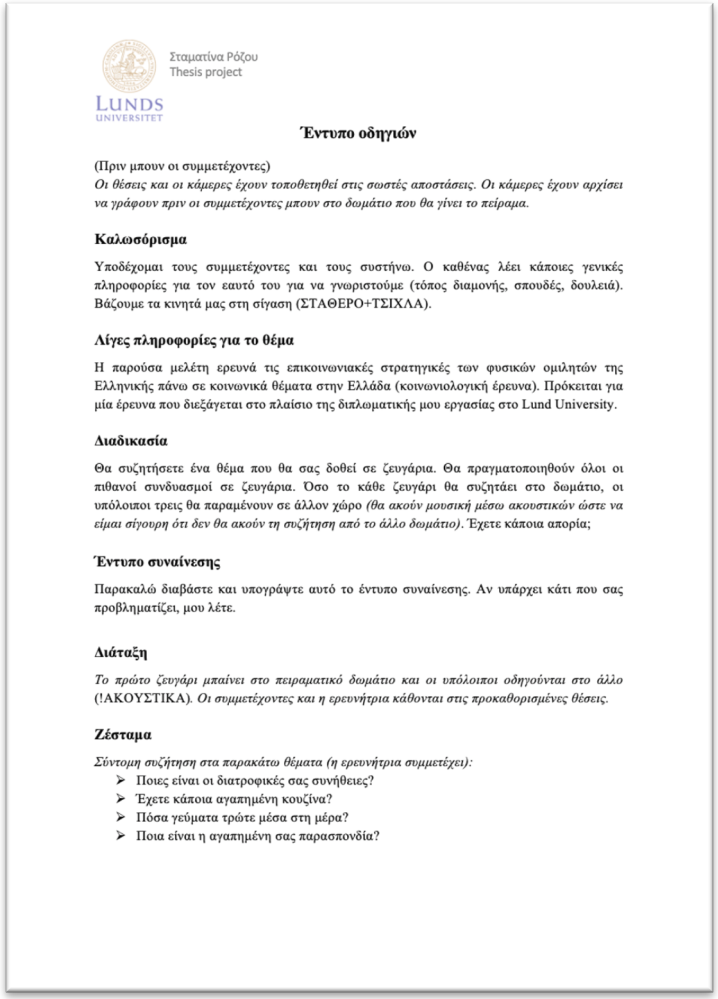
Δίνω τη συγκατάθεσή μου ώστε τα αποτελέσματα της έρευνας να μπορούν να παρουσιαστούν σε επιστημονικά συνέδρια, σεμινάρια καθώς και σε επιστημονικά περιοδικά. Μεμονωμένες μαγνητοσκοπήσεις μπορούν να προβληθούν σε συνέδρια και σεμινάρια και στατικές εικόνες από το βιντεοσκοπικό υλικό μπορούν να εκτυπωθούν σε επιστημονικά περιοδικά προς επεξήγηση των αποτελεσμάτων. Είναι σημαντικό να τονιστεί για ακόμα μία φορά ότι η ερευνήτρια εγγυάται για την ανωνυμία των συμμετεχόντων.

Με την υπογραφή μου πιστοποιώ ότι έχω διαβάσει και κατανοήσει όσα αναγράφονται παραπάνω. Επίσης, βεβαιώνω ότι δεν θα προβώ σε νομικές αξιώσεις για δικαιώματα που έχουν σχέση με την παρούσα έρευνα. Τέλος, θα λάβω ένα αντίγραφο του παρόντος εντύπου και θα ενημερωθώ σχετικά με το περιεχόμενο και τον στόχο της διπλωματικής διατριβής, μετά την ολοκλήρωση της συλλογής δεδομένων.

Υπογραφή	Ημερομηνία
Ονοματεπώνυμο ολογράφως	Υπογραφή Ερευνητή

Στοιχεία επικοινωνίας:

Appendix B: Instructions and session script



Σταματίνα Ρόζου
Thesis project

LUNDS UNIVERSITET

Έντυπο οδηγιών

(Πριν μπουν οι συμμετέχοντες)
Οι θέσεις και οι κάμερες έχουν τοποθετηθεί στις σωστές αποστάσεις. Οι κάμερες έχουν αρχίσει να γράφουν πριν οι συμμετέχοντες μπουν στο δωμάτιο που θα γίνει το πείραμα.

Καλωσόρισμα

Υποδέχομαι τους συμμετέχοντες και τους συστήνω. Ο καθένας λέει κάποιες γενικές πληροφορίες για τον εαυτό του για να γνωριστούμε (τόπος διαμονής, σπουδές, δουλειά). Βάζουμε τα κινητά μας στη σίγαση (ΣΤΑΘΕΡΟ+ΤΣΙΧΛΑ).

Λίγες πληροφορίες για το θέμα

Η παρούσα μελέτη ερευνά τις επικοινωνιακές στρατηγικές των φυσικών ομιλητών της Ελληνικής πάνω σε κοινωνικά θέματα στην Ελλάδα (κοινωνιολογική έρευνα). Πρόκειται για μία έρευνα που διεξάγεται στο πλαίσιο της διπλωματικής μου εργασίας στο Lund University.

Διαδικασία

Θα συζητήσετε ένα θέμα που θα σας δοθεί σε ζευγάρια. Θα πραγματοποιηθούν όλοι οι πιθανοί συνδυασμοί σε ζευγάρια. Όσο το κάθε ζευγάρι θα συζητάει στο δωμάτιο, οι υπόλοιποι τρεις θα παραμένουν σε άλλον χώρο *(θα ακούν μουσική μέσω ακουστικών ώστε να είμαι σίγουρη ότι δεν θα ακούν τη συζήτηση από το άλλο δωμάτιο)*. Έχετε κάποια απορία;

Έντυπο συναίνεσης

Παρακαλώ διαβάστε και υπογράψτε αυτό το έντυπο συναίνεσης. Αν υπάρχει κάτι που σας προβληματίζει, μου λέτε.

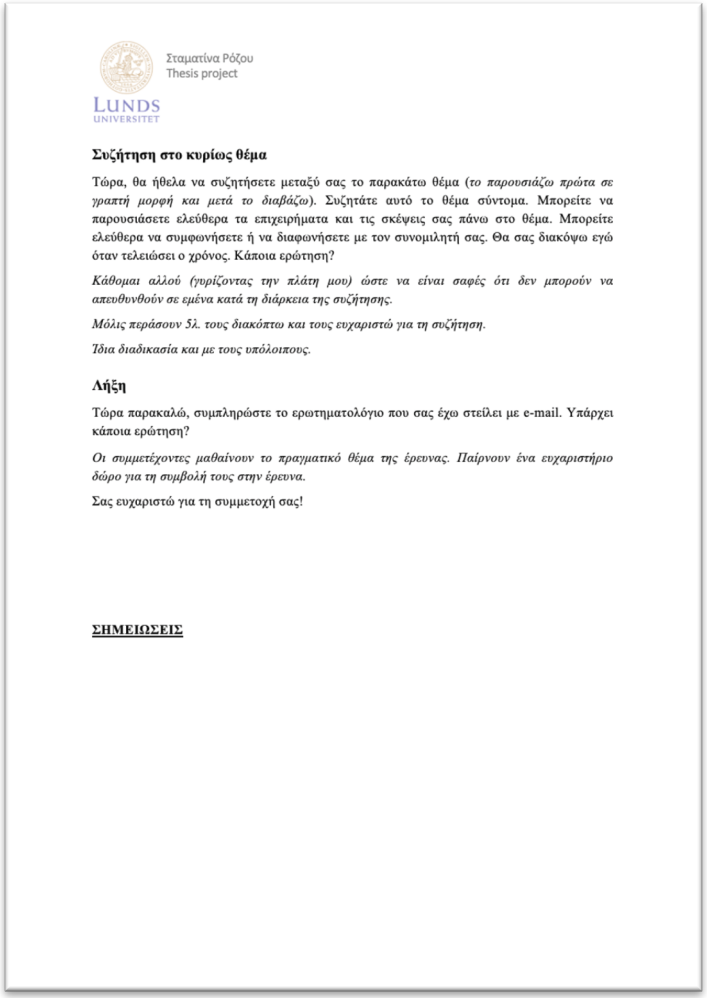
Διάταξη

Το πρώτο ζευγάρι μπαίνει στο πειραματικό δωμάτιο και οι υπόλοιποι οδηγούνται στο άλλο (!ΑΚΟΥΣΤΙΚΑ). *Οι συμμετέχοντες και η ερευνήτρια κάθονται στις προκαθορισμένες θέσεις.*

Ζέσταμα

Σύντομη συζήτηση στα παρακάτω θέματα (η ερευνήτρια συμμετέχει):

- Ποιες είναι οι διατροφικές σας συνήθειες?
- Έχετε κάποια αγαπημένη κουζίνα?
- Πόσα γεύματα τρώτε μέσα στη μέρα?
- Ποια είναι η αγαπημένη σας παρασπονδία?



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Συζήτηση στο κυρίως θέμα

Τώρα, θα ήθελα να συζητήσετε μεταξύ σας το παρακάτω θέμα (*το παρουσιάζω πρώτα σε γραπτή μορφή και μετά το διαβάζω*). Συζητάτε αυτό το θέμα σύντομα. Μπορείτε να παρουσιάσετε ελεύθερα τα επιχειρήματα και τις σκέψεις σας πάνω στο θέμα. Μπορείτε ελεύθερα να συμφωνήσετε ή να διαφωνήσετε με τον συνομιλητή σας. Θα σας διακόψω εγώ όταν τελειώσει ο χρόνος. Κάποια ερώτηση?

Κάθομαι αλλού (γυρίζοντας την πλάτη μου) ώστε να είναι σαφές ότι δεν μπορούν να απευθυνθούν σε εμένα κατά τη διάρκεια της συζήτησης.

Μόλις περάσουν 5λ. τους διακόπτω και τους ευχαριστώ για τη συζήτηση.

Ίδια διαδικασία και με τους υπόλοιπους.

Λήξη

Τώρα παρακαλώ, συμπληρώστε το ερωτηματολόγιο που σας έχω στείλει με e-mail. Υπάρχει κάποια ερώτηση?

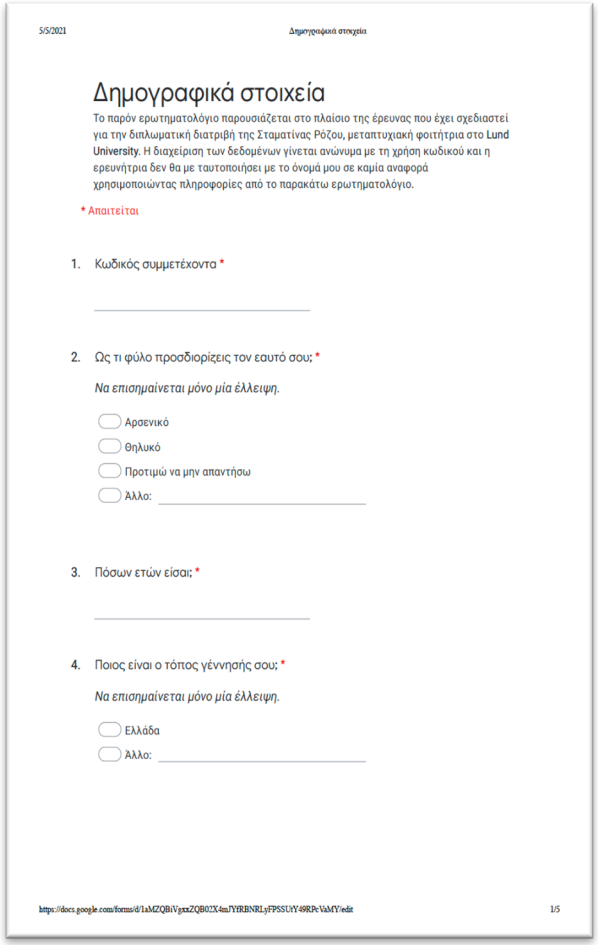
Οι συμμετέχοντες μαθαίνουν το πραγματικό θέμα της έρευνας. Παίρνουν ένα ευχαριστήριο δώρο για τη συμβολή τους στην έρευνα.

Σας ευχαριστώ για τη συμμετοχή σας!

ΣΗΜΕΙΩΣΕΙΣ

For an English version visit: https://docs.google.com/document/d/1CS3Z6rpPiIG3b3ktX9vSIn-6NSgbJqaw/edit

Appendix C: Questionnaire



5/5/2021 Δημογραφικά στοιχεία

Δημογραφικά στοιχεία

Το παρόν ερωτηματολόγιο παρουσιάζεται στο πλαίσιο της έρευνας που έχει σχεδιαστεί για την διπλωματική διατριβή της Σταματίνας Ρόζου, μεταπτυχιακή φοιτήτρια στο **Lund University**. Η διαχείριση των δεδομένων γίνεται ανώνυμα με τη χρήση κωδικού και η ερευνήτρια δεν θα με ταυτοποιήσει με το όνομά μου σε καμία αναφορά χρησιμοποιώντας πληροφορίες από το παρακάτω ερωτηματολόγιο.

* Απαιτείται

1. Κωδικός συμμετέχοντα *

2. Ως τι φύλο προσδιορίζεις τον εαυτό σου; *

Να επισημαίνεται μόνο μία έλλειψη.

- Αρσενικό
- Θηλυκό
- Προτιμώ να μην απαντήσω
- Άλλο: _____

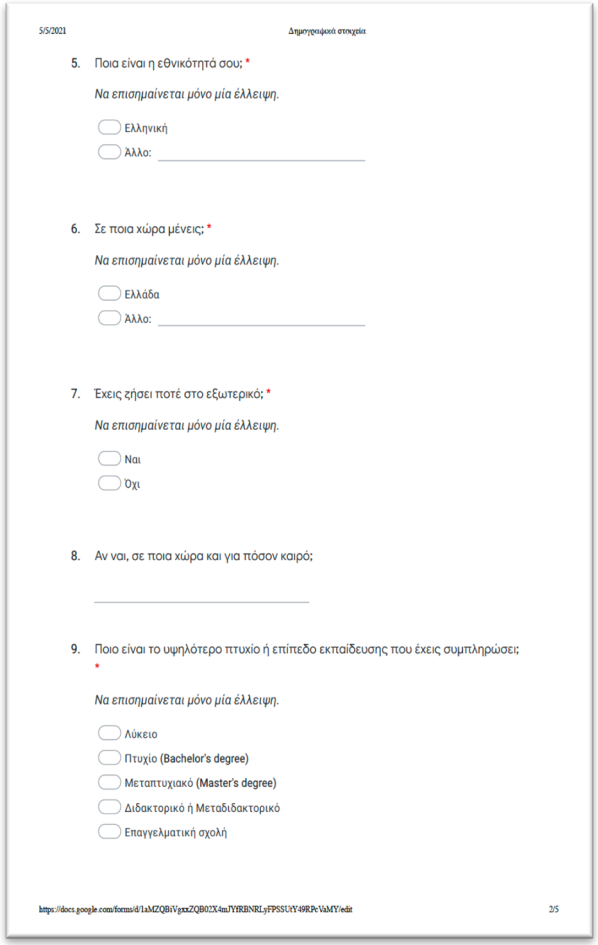
3. Πόσων ετών είσαι; *

4. Ποιος είναι ο τόπος γέννησής σου; *

Να επισημαίνεται μόνο μία έλλειψη.

- Ελλάδα
- Άλλο: _____

https://docs.google.com/forms/d/1aMZQBiVgxxZQB02X4mJYfRBNRLyFPSSUtY49RPcVaMY/edit 1/5



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5. Ποια είναι η εθνικότητά σου; *

Να επισημαίνεται μόνο μία έλλειψη.

- Ελληνική
- Άλλο: _____

6. Σε ποια χώρα μένεις; *

Να επισημαίνεται μόνο μία έλλειψη.

- Ελλάδα
- Άλλο: _____

7. Έχεις ζήσει ποτέ στο εξωτερικό; *

Να επισημαίνεται μόνο μία έλλειψη.

- Ναι
- Όχι

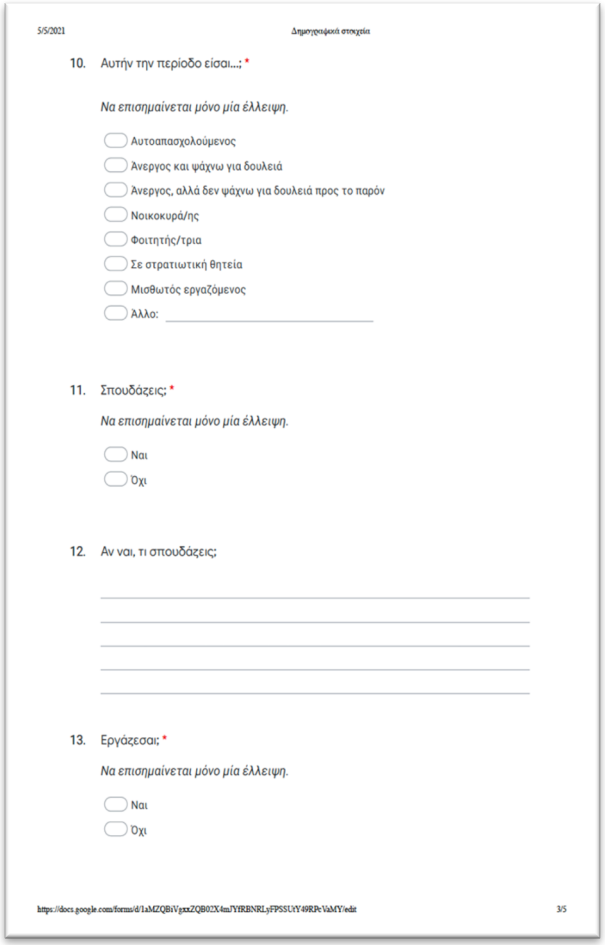
8. Αν ναι, σε ποια χώρα και για πόσον καιρό;

9. Ποιο είναι το υψηλότερο πτυχίο ή επίπεδο εκπαίδευσης που έχεις συμπληρώσει; *

Να επισημαίνεται μόνο μία έλλειψη.

- Λύκειο
- Πτυχίο (Bachelor's degree)
- Μεταπτυχιακό (Master's degree)
- Διδακτορικό ή Μεταδιδακτορικό
- Επαγγελματική σχολή

https://docs.google.com/forms/d/1aMZQBiVgxxZQB02X4mJYfRBNRLyFPSSUtY49RPcVaMY/edit 2/5



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10. Αυτήν την περίοδο είσαι...; *

Να επισημαίνεται μόνο μία έλλειψη.

- Αυτοαπασχολούμενος
- Άνεργος και ψάχνω για δουλειά
- Άνεργος, αλλά δεν ψάχνω για δουλειά προς το παρόν
- Νοικοκυρά/ης
- Φοιτητής/τρια
- Σε στρατιωτική θητεία
- Μισθωτός εργαζόμενος
- Άλλο: _____

11. Σπουδάζεις; *

Να επισημαίνεται μόνο μία έλλειψη.

- Ναι
- Όχι

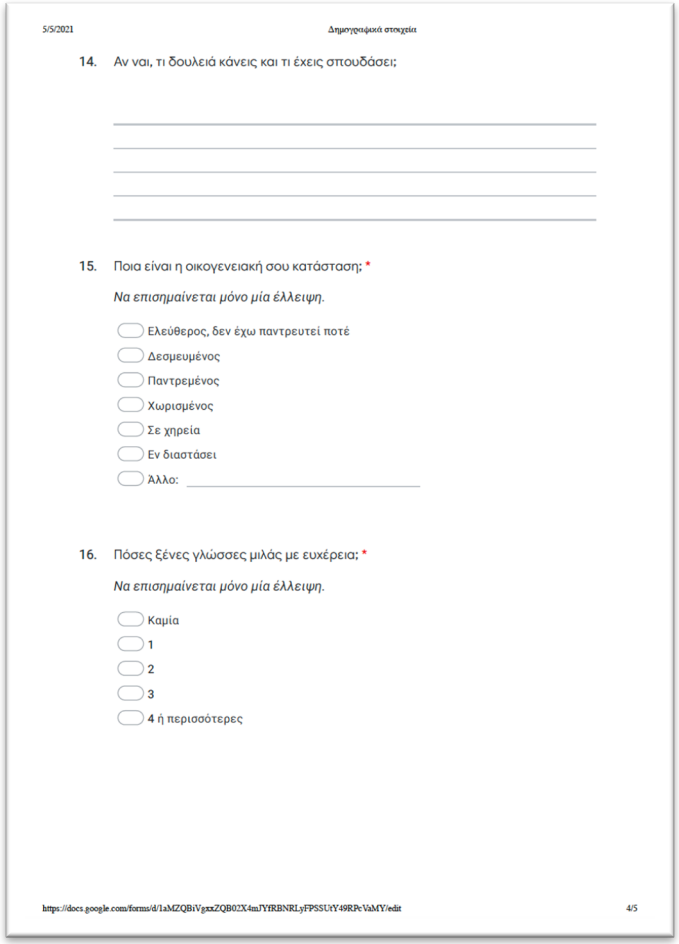
12. Αν ναι, τι σπουδάζεις;

13. Εργάζεσαι; *

Να επισημαίνεται μόνο μία έλλειψη.

- Ναι
- Όχι

https://docs.google.com/forms/d/1aMZQBiVgxxZQB02X4mJYfRBNRLyFPSSUtY49RPcVaMY/edit 3/5



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14. Αν ναι, τι δουλειά κάνεις και τι έχεις σπουδάσει;

15. Ποια είναι η οικογενειακή σου κατάσταση; *

Να επισημαίνεται μόνο μία έλλειψη.

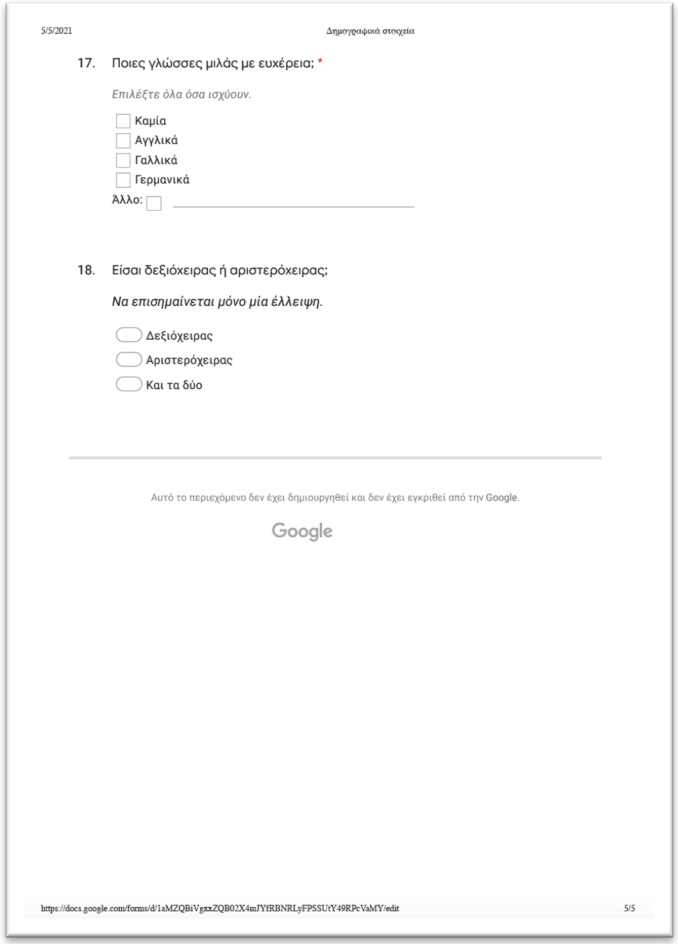
- Ελεύθερος, δεν έχω παντρευτεί ποτέ
- Δεσμευμένος
- Παντρεμένος
- Χωρισμένος
- Σε χηρεία
- Εν διαστάσει
- Άλλο: _____

16. Πόσες ξένες γλώσσες μιλάς με ευχέρεια; *

Να επισημαίνεται μόνο μία έλλειψη.

- Καμία
- 1
- 2
- 3
- 4 ή περισσότερες

https://docs.google.com/forms/d/1aMZQBiVgxxZQB02X4mJYfRBNRLyFPSSUtY49RPcVaMY/edit 4/5



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17. Ποιες γλώσσες μιλάς με ευχέρεια; *

Επιλέξτε όλα όσα ισχύουν.

- Καμία
- Αγγλικά
- Γαλλικά
- Γερμανικά

Άλλο: _____

18. Είσαι δεξιόχειρας ή αριστερόχειρας;

Να επισημαίνεται μόνο μία έλλειψη.

- Δεξιόχειρας
- Αριστερόχειρας
- Και τα δύο

Αυτό το περιεχόμενο δεν έχει δημιουργηθεί και δεν έχει εγκριθεί από την Google.

Google

https://docs.google.com/forms/d/1aMZQBiVgxxZQB02X4mJYfRBNRLyFPSSUtY49RPcVaMY/edit 5/5

For an English version visit: https://docs.google.com/forms/d/197IYM9QVB44w0oB5fYw5yj8O6G8ZcUrBB-ef_nyAkzM/edit

Appendix D: Example of Reintroduction

P03 (UM): (…) δεν είναι εύκολο για όλους τους ανθρώπους να είναι είτε vegan είτε vegetarian **για λόγους υγείας** (…) και μου φαίνεται και μια υπερβολή ενδεχομένως το αναγκαστικά vegan, ενώ με βρίσκει πολύ σύμφωνο το concept του να μην εκμεταλλευόμαστε και να μειώσουμε την κακοποίηση που υφίστανται τα ζώα, που αναμφίβολα υφίστανται τα ζώα για να τρεφόμαστε με κρέας σ' αυτόν τον βαθμό.

P01 (F): Μχμ.

P03 (UM): Τα προϊόντα των ζώων και η κατανάλωση ζώων εντός ανθρωπιστικών, ας πούμε, ορίων μου φαίνεται φυσική.

→ P01 (F): Ναι, και πριν κι εγώ αυτό έλεγα, ότι ουσιαστικά, vegan το βρίσκω λίγο ακραίο, και το όλοι να είμαστε vegan. **Και για ιατρικούς λόγους**, θέματα υγείας (…).

Translation:

P03 (UM): (…) it's not easy for all people to be either vegan or vegetarian **for health reasons**, too (…) and it seems to me that being necessarily vegan is probably an exaggeration, while I agree a lot with the concept of not exploiting and reducing the animal abuse, that definitely exists so that we eat this amount of meat.

P01 (F): Mhm.

P03 (UM): The animal products and the consumption of animal flesh within human limitation, let's say, it seems to me normal.

→ P01 (F): Yes, I was saying the same previously, that essentially, being vegan is something extreme to me, as well as that we should all be vegan. **And for medical reasons**, health issues (…).

Appendix E: Summary tables of speech and gestures

Table 18. Raw number of one-hand and two-hands gestures across the conditions and agreement categories.

	NUMBER OF HANDS																
Target speaker's gender	FEMALES								MALES								
Conditions	FaF		FaM		UF		UM		FaF		FaM		UF		UM		
Alternatives	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	TOTAL
Affiliative Comment	-	-	-	-	-	-	3	-	1	-	-	-	-	-	-	-	4
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Confirmation	7	1	1	-	6	1	7	3	2	2	-	-	1	1	3	-	35
Explanation	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	-	2
Interjection	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Negative Agreement	-	-	2	-	-	-	3	-	-	-	-	-	-	-	-	-	5
Reintroduction	1	-	1	-	1	-	1	-	-	-	-	-	-	-	-	1	5
Repetition	3	-	-	-	-	-	2	-	-	-	-	1	-	1	-	2	9
Rephrasing	-	-	-	1	2	-	-	-	-	-	2	-	-	-	-	1	6
Supplementation	1	-	-	-	2	-	6	1	-	-	2	-	-	-	6	-	18
TOTAL	13	2	4	1	11	1	22	4	3	2	5	1	1	2	9	4	**85**

Table 19. Raw number of gestures depending on the expressed movement across the conditions and agreement categories.[13]

	MOVEMENT															
Target speaker's gender	FEMALES															
Conditions	FaF								FaM							
Alternatives	**CM**	**LM**	**OLUM**	**ORUM**	**RM**	**SFM**	**STM**	**VM**	**CM**	**LM**	**OLUM**	**ORUM**	**RM**	**SFM**	**STM**	**VM**
Affiliative Comment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	-	1	-	-	-	4	-	3	-	-	-	-	-	1	-	-
Explanation	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interjection	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Reintroduction	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-
Repetition	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-
Rephrasing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Supplementation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	0	3	0	0	0	7	0	4	0	0	0	0	0	2	0	2

[13] GIM have not been counted for this table (for details see 4.4.2).

	MOVEMENT															
Target speaker's gender	FEMALES															
Conditions	UF								UM							
Alternatives	**CM**	**LM**	**OLUM**	**ORUM**	**RM**	**SFM**	**STM**	**VM**	**CM**	**LM**	**OLUM**	**ORUM**	**RM**	**SFM**	**STM**	**VM**
Affiliative Comment	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	-	-	-	-	2	2	-	3	-	1	-	-	1	6	1	-
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interjection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
Reintroduction	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repetition	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
Rephrasing	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Supplementation	1	-	-	-	-	1	-	-	1	-	-	1	1	1	1	2
TOTAL	2	1	0	0	2	3	0	4	2	2	0	1	3	8	5	2

	MOVEMENT															
Target speaker's gender	MALES															
Conditions	FaF								FaM							
Alternatives	**CM**	**LM**	**OLUM**	**ORUM**	**RM**	**SFM**	**STM**	**VM**	**CM**	**LM**	**OLUM**	**ORUM**	**RM**	**SFM**	**STM**	**VM**
Affiliative Comment	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	-	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Interjection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reintroduction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repetition	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Rephrasing	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-
Supplementation	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-
TOTAL	0	1	0	0	0	1	0	1	0	2	0	0	0	4	0	1

	MOVEMENT																
Target speaker's gender	MALES																
Conditions	UF								UM								
Alternatives	**CM**	**LM**	**OLUM**	**ORUM**	**RM**	**SFM**	**STM**	**VM**	**CM**	**LM**	**OLUM**	**ORUM**	**RM**	**SFM**	**STM**	**VM**	TOTAL
Affiliative Comment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Confirmation	-	-	-	-	-	-	-	2	-	1	-	-	1	1	-	-	32
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Interjection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Negative Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Reintroduction	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	4
Repetition	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	1	9
Rephrasing	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	6
Supplementation	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	17
TOTAL	0	0	0	0	1	0	0	2	0	2	1	0	4	2	1	3	**79**

Table 20. Raw number of hand movements depending on their orientation across the conditions and the agreement categories.[14]

	ORIENTATION																	
Target speaker's gender	FEMALES																	
Conditions	FaF									FaM								
Alternatives	**PD**	**PDO**	**PF**	**PS**	**PSL**	**PSR**	**PT**	**PU**	**PUO**	**PD**	**PDO**	**PF**	**PS**	**PSL**	**PSR**	**PT**	**PU**	**PUO**
Affiliative Comment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	1	-	-	-	1	1	1	3	1	1	-	-	-	-	-	-	-	-
Explanation	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Interjection	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Reintroduction	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-
Repetition	1	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-
Rephrasing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Supplementation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	2	0	0	0	2	3	1	5	1	2	0	0	0	0	0	0	2	0

[14] GIM have not been counted for this table (for details see 4.4.2)

	ORIENTATION																
Target speaker's gender	FEMALES																
Conditions	UF									UM							
Alternatives	**PD**	**PDO**	**PF**	**PS**	**PSL**	**PSR**	**PT**	**PU**	**PUO**	**PD**	**PDO**	**PF**	**PS**	**PSL**	**PSR**	**PT**	**PU**	**PUO**
Affiliative Comment	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	2	-	-	-	3	1	-	-	1	1	-	1	1	-	-	-	5	1
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interjection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-
Reintroduction	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repetition	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Rephrasing	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Supplementation	-	-	1	-	-	-	-	1	-	2	2	-	-	1	-	1	-	1
TOTAL	3	1	1	0	3	1	1	1	1	6	2	3	1	1	2	1	5	2

	ORIENTATION																	
Target speaker's gender	MALES																	
Conditions	FaF									FaM								
Alternatives	**PD**	**PDO**	**PF**	**PS**	**PSL**	**PSR**	**PT**	**PU**	**PUO**	**PD**	**PDO**	**PF**	**PS**	**PSL**	**PSR**	**PT**	**PU**	**PUO**
Affiliative Comment	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Interjection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reintroduction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repetition	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Rephrasing	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-
Supplementation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
TOTAL	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	1	1	3

	ORIENTATION																		
Target speaker's gender	MALES																		
Conditions	UF									UM									
Alternatives	**PD**	**PDO**	**PF**	**PS**	**PSL**	**PSR**	**PT**	**PU**	**PUO**	**PD**	**PDO**	**PF**	**PS**	**PSL**	**PSR**	**PT**	**PU**	**PUO**	TOTAL
Affiliative Comment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Confirmation	1	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	-	1	32
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Interjection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Negative Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Reintroduction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	4
Repetition	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	1	9
Rephrasing	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	6
Supplementation	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	2	17
TOTAL	1	0	0	0	0	0	0	0	2	2	0	0	1	1	2	1	1	5	**79**

Table 21. Raw number of handshapes produced across the conditions and the agreement categories.

	HANDSHAPE															
Target speaker's gender	FEMALES															
Conditions	FaF								FaM							
Alternatives	**CH**	**FS**	**G**	**GIM**	**IFE**	**OH**	**PA**	**R**	**CH**	**FS**	**G**	**GIM**	**IFE**	**OH**	**PA**	**R**
Affiliative Comment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	-	-	1	-	2	5	-	-	-	-	-	-	-	1	-	-
Explanation	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Interjection	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
Reintroduction	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-
Repetition	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
Rephrasing	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Supplementation	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	0	0	1	1	3	10	0	0	0	0	2	1	1	1	0	0

	HANDSHAPE															
Target speaker's gender	FEMALES															
Conditions	UF								UM							
Alternatives	**CH**	**FS**	**G**	**GIM**	**IFE**	**OH**	**PA**	**R**	**CH**	**FS**	**G**	**GIM**	**IFE**	**OH**	**PA**	**R**
Affiliative Comment	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	-	1	-	-	1	5	-	-	1	-	-	1	3	5	-	-
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Interjection	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-
Reintroduction	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-
Repetition	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-
Rephrasing	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Supplementation	-	-	-	-	-	2	-	-	-	-	-	-	2	2	2	1
TOTAL	0	1	2	0	1	9	0	1	1	0	0	3	8	11	2	1

	HANDSHAPE															
Target speaker's gender	MALES															
Conditions	FaF								FaM							
Alternatives	**CH**	**FS**	**G**	**GIM**	**IFE**	**OH**	**PA**	**R**	**CH**	**FS**	**G**	**GIM**	**IFE**	**OH**	**PA**	**R**
Affiliative Comment	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Confirmation	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Interjection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Negative Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reintroduction	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Repetition	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Rephrasing	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-
Supplementation	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-
TOTAL	0	1	0	1	1	3	0	0	0	0	0	0	1	5	0	0

	HANDSHAPE																
Target speaker's gender	MALES																
Conditions	UF								UM								
Alternatives	**CH**	**FS**	**G**	**GIM**	**IFE**	**OH**	**PA**	**R**	**CH**	**FS**	**G**	**GIM**	**IFE**	**OH**	**PA**	**R**	TOTAL
Affiliative Comment	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
Clarification	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Confirmation	-	-	-	-	-	2	-	-	-	-	-	-	1	2	-	-	35
Explanation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Interjection	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Negative Agreement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
Reintroduction	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	5
Repetition	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	9
Rephrasing	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	6
Supplementation	-	-	-	-	-	-	-	-	-	-	-	-	1	4	1	-	18
TOTAL	0	0	0	0	0	3	0	0	0	0	0	0	2	10	1	0	**85**

Appendix F: Illustration of the less frequently used handshapes

Figure 15a. Close Hand.

Figure 15b. Ring.

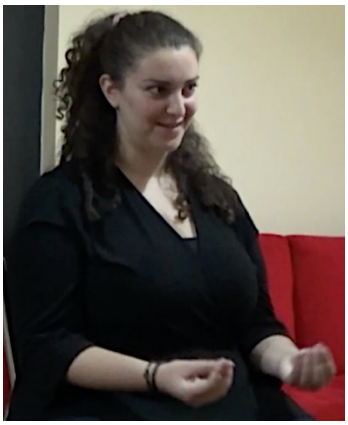

Figure 15c. Grappolo.

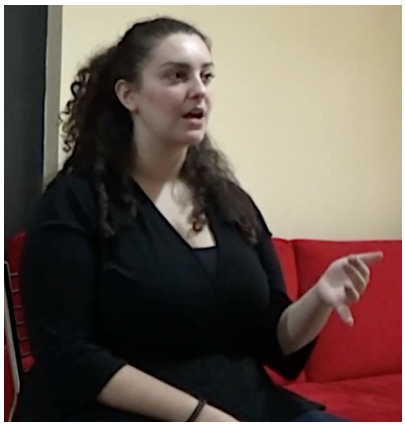

Figure 15d. Palm Angular.

Figure 15e. Fingers Spread.