

## **The Effect of Emblematic Gestures on the Memorization of Greek Expressions by Immigrants**

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### **Abstract**

*A number of studies have shown that accompanying lexical items of a foreign language with gestures leads to better results when it comes to memorizing them. This article examines the effect of emblematic gestures on second language memorization by learners immersed in the target culture. Fifteen immigrants took part in an experiment aiming to assess active knowledge on new vocabulary. They had to learn 27 Greek multi-word expressions and two different teaching methods were applied. The control group was taught multi-word expressions included in everyday communicative situations by reading and listening, while the gesture group was taught the same expressions in the same way, in addition to being exposed to the use of relevant gestures. Results have shown that gestures indeed influence the memorization of L2 lexical items and leave a richer trace in the memory of students.*

**Keywords:** gestures, memorization, L2 language learning, multi-word expressions

### **Introduction**

Many studies focus on various strategies that have been used to assist in learning and teaching of vocabulary in L2 classroom. (Irujo, 1986, Nation 2001, Anastasiadis-Symeonidi & Efthimiou, 2006, Zaga 2007, Boers et al. 2007). Constant repetition, association of new words with relevant images, visualization of mental images, the keyword method and the use of semantic maps are examples of mnemonics techniques used for educational purposes.

However, several studies have emphasised the role of gestures in L2 acquisition (for an overview, see Gullberg, 2008) and have shown that accompanying lexical items of a foreign language with gestures leads to better results when it comes to memorising them. L2 teachers declare that gestures help learners in the process of memorising the second language lexicon. Many of them have noticed that learners can retrieve a word with no difficulty when the teacher produces the gesture associated with the lexical item before them during the lesson (Tellier 2008).

Experiments have demonstrated that the multimodality can reinforce memorisation, especially when both verbal and non-verbal modalities co-occur (Clark & Paivio's Dual Coding Theory 1991). Baddeley (1990) argues that the co-occurrence of several modalities has an impact on memorisation because it leaves more traces in the memory system. Moreno & Mayer (2000) suggest that multimedia learning can be efficient because it conveys both auditory and visual information.

Furthermore, research in cognitive psychology has highlighted the effect of enactment and of the motor modality on memorisation. Recall of enacted "action phrases" has been found to be easier than recalling the same phrases without corresponding enactment (Engelkamp & Cohen, 1991; Cohen & Otterbein, 1992). Engelkamp & Zimmer (1985) demonstrated that the free recall of enacted sentences is superior to the recall of simply spoken sentences and to the recall of visually imaged sentences. As far as the effect of gestures on memorisation of items in L2 is concerned, there have been very few studies. Quinn-Allen's (1995) experiment seems to be the first empirical study on the influence of gestures on memory for L2. However, this study does not assess how many expressions were remembered by L2 subjects specifically with the use of gestures, but rather focused solely on the overall results concerning how many expressions the subjects could translate.

More recent studies have highlighted the role of gestures on the memorisation of lexical items in L2 (Tellier 2008, Kelly et al. 2009, Macedonia 2003, Macedonia et al. 2011, Macedonia and Knösche 2011, Porter 2012, Mayer et al. 2014, Macedonia et al., 2014b, Bergmann and Macedonia, 2013, Macedonia et al., 2014a). It has been generally emphasised that performing gestures in L2 learning was more efficient than most teaching approaches. Only a few studies report finding no enhancement of memory by including gestures in L2 teaching (Krönke et al., 2013; Rowe et al., 2013).

### ***The study***

The aim of this study is to examine the use of gestures as a mnemonic technique in the teaching/learning of Greek as a second/foreign language. This study was conducted in the framework of "Polytropon" project (National Strategic Reference Framework - NSRF 2007-2013) and investigates the role of emblematic gestures on the memorisation of greek multi-word expressions by immigrants.

‘Multi-word expression’ is used as a general term that includes phenomena with different degrees of syntactic fixedness and semantic compositionality. Multi-word expressions are complex by definition. Consisting of a minimum of two words, they cut across word boundaries (Müller et al., 2011). Multi- word expressions are “lexical units larger than a word that can bear both idiomatic and compositional meanings. (...) the term multi-word expression is used as a pre-theoretical label to include the range of phenomena that goes from collocations to fixed expressions” (Masini 2005:145).

More specifically, this study examines the reproduction of Greek multi-word expressions by immigrants, providing an opportunity to check whether learners are reproducing relevant gestures while reproducing multi-word expressions.

### ***Participants***

Fifteen (15) immigrants (6 from Russia, 3 from Poland, 2 from Georgia, 2 from Ukraine, 1 from Syria and 1 from Albania) living in Athens took part in this experiment. More specifically, the participants were migrant women aged from 30 to 60 years old (4 participants between 30 and 40 years old, 4 between 40 and 50 years and 7 between 50 and 60 years). Three (3) out of the total had received university education and in their home countries they were employed as a teacher, a gym teacher and an employee in a tourism company respectively. Nine (9) of them were employed in their home countries without having received higher education (secretary, accountant, potter, dressmaker, knitter, piano teacher, art teacher, pastry clerk, employee at a dairy plant). Finally, three (3) of them had only received the compulsory education and had been unemployed in their home countries. When the research was conducted, all of them were attending Greek language lessons as second year students at the Lyceum of Greek Women (3 hours per week).

### ***Procedure***

Two months before the main study, fifty-five (55) migrant women who had been attending Greek language lessons for two to four years, took a multiple choice test of comprehension questions. These questions concerned 66 Greek expressions extracted from “Communicate in Greek - A conceptual dictionary of gestures and expressions”<sup>1</sup>. The purpose of this test was to identify which of the 66 expressions were unknown to the majority of these students and, consequently, which expressions should be used during the upcoming research. 27 multi-word expressions, most of which were idiomatic expressions, were selected as the least known (the ones that gathered 6 to 34 wrong answers, see Appendix 1) to be used in the main study of the fifteen (15) participants.

The main study lasted one week. The selected expressions were embedded into eight (8) communicative situations in the form of brief dialogues, developed to be presented to two groups of students by a teacher and in print form. The control group (8 students) was taught the expressions by reading and listening during a two-hour session. The expressions were highlighted in the printed text and the teacher made sure that their meaning was understood by everyone.

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<sup>1</sup> Communicate in Greek - A conceptual lexicon of gestures and expressions (Antoniou-Kritikou, 2008) is a collection of Greek gestures accompanied by their description, relevant Greek expressions, examples of usage and other useful information.

The gesture group (7 students) was taught the same expressions in the same amount of time and through the same communicative situations, with one difference; in the printed text, each expression was accompanied by an illustrated gesture. Furthermore, the teacher performed the gestures and gave explicit instructions about their use. Both the control and gesture group were encouraged to reproduce the dialogues in the form of role playing during class time, assisted by the printed texts (see an example of a situation

1 Communicate in Greek - A conceptual lexicon of gestures and expressions (Antoniou-Kritikou, 2008) is a collection of Greek gestures accompanied by their description, relevant Greek expressions, examples of usage and other useful information. of communication in Appendix 2). The teacher who assessed this procedure in both groups examined whether the expressions were accompanied by the relevant gestures in the gesture group. Students of both groups were recommended to study the 8 dialogues in their own time, in order to be able to reproduce them in role playing activities.

One week later, in order to assess their ability to reproduce the new expressions, all students were paired up in order to be videotaped reproducing the 8 dialogues they had been studying after the teaching sessions. The role playing activity was utilised to assess the use of the selected expressions in the reproduction of the dialogues. In the case of the gesture group, the teacher was able to examine if/how the students were using the relevant gestures to accompany the reproduction of the expressions.

During this experiment, all participants were aware of the fact that they were being videotaped and had signed a consent form. The videotaping took place in an empty classroom where the participants were sitting next to each other, not facing the camera in a direct way (see video frame). As expected, the control group generally reproduced the scripted dialogue without the support of any gestures while the gesture group used the gestures they had been taught in the classroom.

#### Video frame: Role playing activity



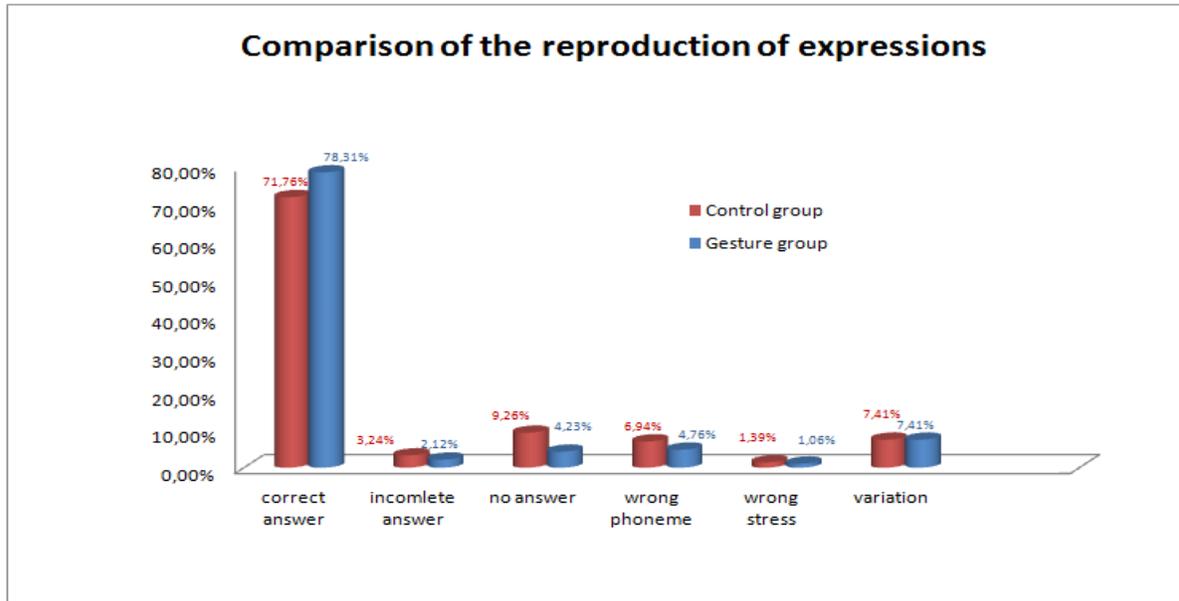
#### Results

As far as the reproduction of expressions is concerned, the control and gesture group's correct reproductions represent 71,76% and 78,31% respectively (cf. Figure4). The reproductions that were considered wrong involved various types of mistakes that are displayed proportionally to the total of expressions used in the dialogues:

- incomplete reproduction (control group: 3,24%, gesture group: 2,12%) e.g. “πιτς φτιλί” instead of “στο πιτς φτιλί” and “πάσο σου” instead of “με το πάσο σου”
- wrong phonemes (control group: 6,94%, gesture group: 4,76%) e.g. “με το πάθος σου” instead of “με το πάσο σου”, “πούνια που τον πούναγε” instead of “κούνια που τον κούναγε”, “παρωμίδες” or “παρεπίδες” instead of “παρωπίδες”, “ψηλομούτη” instead of “ψηλομούτα”
- wrong stressing (control group: 1,39% and gesture group: 1,06%) e.g. “στραβοξύλο” instead of “στραβόξύλο”, “τη βουτήξαν” instead of “τη βούτηξαν”

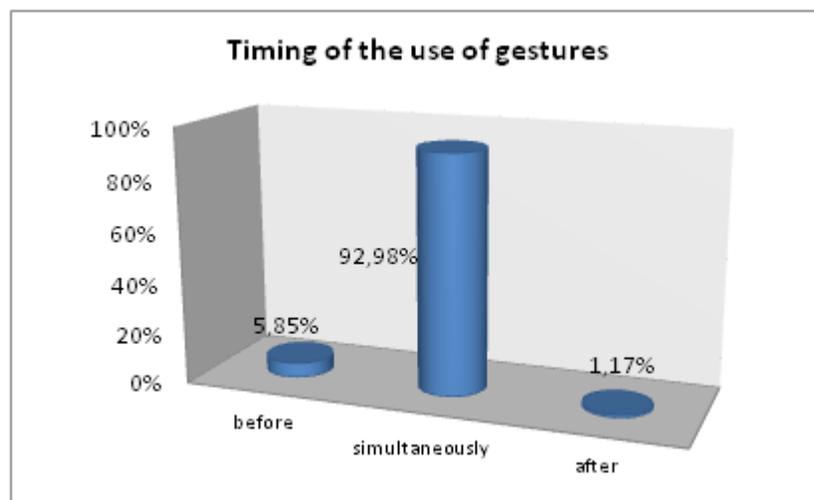
- incorrect variations (control group: 7,41%, gesture group: 7,41%) e.g. “μ’ έχεις φτάσει ως εδώ” or “έχω φτάσει ως εδώ” instead of “μ’ έχεις φέρει ως εδώ”, “Τι σου έφερα” instead of “σου την έφερα”, “Που πήγανε να” or “μου έχει κάνει να” instead of “μου πήγε να”, “τύπος και πολύγραμμος” instead of “τύπος και υπογραμμός”, “στραβός” or “ζυλόστραβο” instead of “στραβόζυλο”
- no answer, meaning that the students could not reproduce the requested expressions/gestures (control group: 9,26 %, gesture group: 4,25%)

**Figure 4: Comparison of the reproduction of expressions (control group/gesture group)**

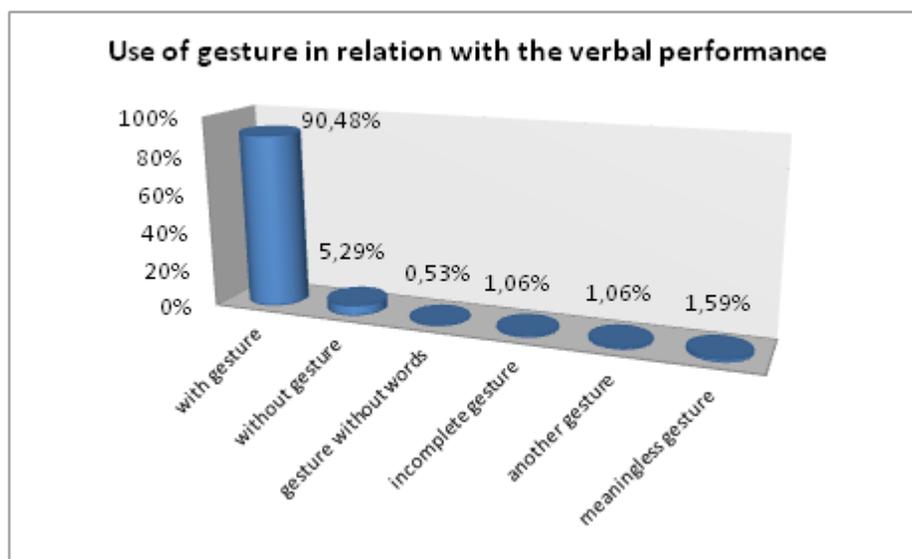


In the case of the gesture group, the fact that the students were being videotaped while reproducing the dialogues allowed us to study the timing of the use of gestures in relation to the corresponding verbal performances. The proportion of participants performing the gesture while simultaneously using the expression was 92,98%, while 5,85% of them used the gesture before the expression and only 1,81% did so after the expression (Figure 5).

**Figure5: The timing of the use of the gesture in relation to the verbal performance**



Moreover, it was interesting to study other aspects of the correlation between the use of gestures and the corresponding verbal performances. The students of the gesture group used the expressions with the suitable gestures 90,48% of the times, while 5,29% of the times the expressions were used without any gesture. Also, 0,53% of the gestures were used without any words, 1,06% of the gestures were incomplete, 1,06% of the times another unsuitable gesture was used and 1,59% a meaningless gesture was performed (Figure 6).



**Figure 6: The use of gesture in relation with the verbal performance**

### ***Discussion – Conclusion***

The present study aimed to investigate the effect of emblematic gestures on the memorization of Greek multi-word expressions by immigrants. The results have shown that gestures influence the memorization of L2 lexical items and leave a richer trace in memory. These findings are consistent with previous studies demonstrating that multimodality can reinforce memorization (Baddeley, 1990; Moreno & Mayer, 2000) and others revealing that the recall of enacted sentences is superior to the recall of sentences without enactment (Engelkamp & Cohen, 1991; Cohen & Otterbein, 1992; Engelkamp & Zimmer, 1985). Moreover, the current experiment reinforces the assumption that the combined use of a spoken modality, a visual modality, and a motor modality leaves a richer trace on memorization (Engelkamp and Cohen, 1991; Cohen and Otterbein, 1992; Nyberg et al., 2002, Tellier, 2008) and support Allen's findings (1995) claiming that learning emblematic gestures with simultaneously presented expressions, in that case in the French language, would cause an increased depth of processing, measured by greater retention.

As far as the Greek language is concerned there had been no study examining the impact of gestures on the memorisation of Greek as L2. The only one (Katsalirou, 2008) concerns mainly the student's opinion about the role of body language in L2 teaching and suggests the teachers to use the body language in different ways in an L2 classroom. The contribution of this study lies in the fact that the experiment regards the impact of emblematic gestures on the memorisation of multi-word expressions in Greek as L2.

More specifically, this study tested the memorisation performances, comparing a baseline (reading and listening to the expressions embedded into dialogues) and a version additionally including emblematic gestures. The gesture group demonstrated a higher degree of ease in the reproduction of expressions compared to the control group (78,31% and 71,76% respectively). Note that the proportion of the control group's failures to remember the selected expressions was double than the gesture group's (gesture group: 4,23%, control group: 9,26%).

Regarding incorrect variations, both control and gesture group produced the same relatively high results (7,41%), reaffirming Irujo's findings (1986), claiming that one of the common mistakes in L2 is to confuse parts of the expressions.

As far as gestures (as an educational method) are concerned, it is suggested that the use of gestures while reproducing dialogues affected the results. The use of this teaching/learning technique shows that for many students, words can be imprinted in their minds in an experience-related way and that this experience can be connected to the body (Glenberg and Kaschak, 2002; Barsalou, 2008; Fischer and Zwaan, 2008) allowing us to consider the body as a learning tool (Macedonia, 2014). Moreover, following and reaffirming Jungheim's findings (1991) suggesting that mere exposure may not suffice for gesture acquisition and that explicit attention to both form and meaning may be necessary, the gesture group received explicit instructions about the gestures and produced positive results.

Moreover, the study of the timing and the way in which gestures were used in relation to the verbal performance shows that students had no difficulties to associate the correct expression with the relevant gesture. The proportion of immigrants performing the gesture while simultaneously using the relevant expression was 92,98%. However, the results of the current study have to be treated with caution due to the limited number of participants. The experiment should be replicated with a larger sample of L2 students, as well as students of all ages in order to draw reliable conclusions.

It could prove valuable for future studies to examine why some expressions in Greek as L2 are better memorised than others. It would be interesting to investigate the impact of gestures on the memorization of different kinds of expressions and study, for instance, if verbs are harder to learn than nouns (see Gentner, 1981, for an overview) or vice versa (Choi & Gopnik, 1995). It would also be interesting to test if the length of the words affects the ability to memorize them (monosyllabic, polysyllabic words) (Baddeley et al., 1975; Lovatt et al., 2000), as well as spelling and pronunciation difficulties as a factor.

Moreover, the distinctiveness of some expressions could be investigated in relation to their memorization (Dat, 2006), examining why, in our study, the participants enthusiastically tried to use only a few of the new expressions in various ways right after the experiment. This may indicate that some expressions were better stored in their memory because they sounded more pleasant or distinctive to them.

This study hopes to shed some light on the effect of emblematic gestures on the memorization of Greek multi-word expressions in L2 and to convince teachers to take advantage of gestures in order to capture the students' attention, to make the lesson more dynamic and, more importantly, to help their students memorise L2 lexical items.

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## Appendix 1: Greek gestures and expressions

Wrong answer	Expressions	Gestures	Gesture's description <sup>2</sup>
6	Είναι λαφτάς "He/She is wealthy"		We rub our thumb against our index finger, with the rest of the fingers closed.
6	Θα τσιμπολογήσω κόμιν "I will grab a bite"		We put forward our hand with our palm facing downwards, we touch the tips of our thumb, index and middle finger together and we pretend to grab pieces of food from different plates.
6	Είναι απαβόξυλο "He/she is wayward"		We grab our collar using our thumb and index finger and shake it nervously.
10	Γκάζει τα μαθηματικά στα δάχτυλά "He is amazing at math"		With our palm facing up, we move the fingers consecutively.
11	Μ' έρχει φέρετ ως εδώ "I am up to here with him/her"		We move our hand upwards along the upper half of our body with our palm facing down. We stop this movement abruptly when we reach our forehead.
11	Χτύπα ξύλο "Knock on wood"		With a closed fist, we hit a piece of wood several times.
13	Είναι αγρία "It's grosse!"		We turn away as if we do not want to see someone or something we have aversion to or causes us discomfort, with our lips closed tightly and our neck muscles slightly stretched.

<sup>2</sup> The descriptions as well as the illustrations of these gestures were taken from the book « Communicate in Greek –A conceptual lexicon of gestures and expressions » (Antoniou-Kritikou, 2008).

14	Κόλλησε το 'High five'		We slap our interlocutor's palm with ours to seal a deal.
15	Στασελά μου 'I couldn't care less'		We push our shoulders up and keep our lips slightly tightened.
18	Την πάτησα 'I am screwed up'		We close all fingers apart from our thumb which points down, and move our hand up and down.
19	Τη βούτηξαν 'They nicked it'		With our palm facing down, we consecutively move each of our fingers to the right, circularly.
22	Τον έγκο στα στα στα 'He/she was mollycoddled'		We put both hands in front of our body, with our palms facing up, as if holding something round, and move them up and down.
23	Μόνα μόν 'Chop-chop!'		With our palms facing to the left (right hand) and our fingers loose, we rapidly move our hand circularly.
23	Είπατε να; πλάι 'I am stuffed'		We move our hand upwards along the upper half of our body with our palm facing down. We stop this movement when we reach our sternum.
25	Στο να; φουλά 'In the blink of an eye'		We push our middle finger against our thumb, which then hits the inside of our palm producing a sound.
26	Σου την έφερα! 'I got you!'		We hit our left hand formed into a fist with our right open palm that faces left in an angle.

26	<b>Να μαντέψω τα νύχια μου;</b> "Should I predict the future?"		We bring our best fingers in front of our nose and pretend to be smelling them.
27	<b>Με κόβουν κάτι λόρδες!</b> "I've got the munchies!"		We move our hand horizontally left and right, with our palm facing up.
28	<b>Με το νάσο σου</b> "Take your time!"		We move our open palm that faces to the front over our shoulder, with our fingers loose.
31	<b>Είνας μπουσάει και ουγούπιω!</b> "It is finger licking good!"		We bring our joined fingertips to our mouth and give them a light kiss.
31	<b>Έχεις παρουνίδες!</b> "He is narrow minded. (like a blinkered horse)"		We place our two open palms at the sides of our head, parallel to our temples.
31	<b>Πάει και ταλάρωσε!</b> "Enough is enough!"		We move our hands up and down, non-synchronised, hitting the palms together, similar to playing the symbols in a symphonic orchestra.
32	<b>Καλά να πιάσεις!</b> "Serve you right!"		With our palm facing up and our fingertips joined, we move our hand parallel to our torso, nodding our heads accordingly.
33	<b>Είνας ψηλομύτης!</b> "She is a snob. (literal trans. "She has an up-pointed nose")"		We push the tip of our nose upwards.
33	<b>Μου κόπη να!</b> "I was scared out of my wits!"		We move our left hand left and right, with a closed fist pointing to the front diagonally.
34	<b>Κούνια σου τον κούνα!</b> "You couldn't be more wrong!"		We move our head up and down and close our lips tightly in disapproval.
34	<b>Είνας τόνος και υπογραμμός!</b> "He/she is very exact. (characterised by strict adherence to standards or rules)"		We pretend to be drawing an imaginary horizontal line in the air, with our thumb and index finger joined and our palm facing forward, with the rest of our fingers loose.

### Appendix 2: Example of a situation of communication

Both the Control and the Gesture group were presented with the same dialogue displayed below. The Greek multi-word expressions we will be focusing on are bolded.

Control group: 'Let's go eat'

A. Πάμε για φαγητό; **Με κόβουν κάτι λόρδες!**  
/páme ja fajitó; me kónun káti lórDes/  
'Let's go eat. I am getting really hungry!'

B. Εγώ θα ήθελα να τσιμπήσω κάτι, δεν πεινάω πολύ. Να μην αργήσουμε όμως.  
/eJó Ta íTela na tsibíso káti, Dén pináo polí. na mín arjísime ómos/  
'I would like to grab a bite, I'm not very hungry. Do not waste a lot of time.'

A. Κι εγώ δεν θέλω να αργήσω. Κόλλα το! Θα φάμε μάνι μάνι.

/c eJó Déη Télo na arjiso. kóla to! Ta fáme máni máni./  
 'I also don't want to be late. Perfect! We will eat quickly.'  
 Μετά από μία ώρα. /metá apó μία óra/ 'An hour later'

B. Έφαγα πάρα πολύ. Είμαι ως εδώ!  
 /éfaJa pára polí. íme ós eDó!/  
 'I ate too much. I'm full!'

A. Το αρνάκι ήταν τέλειο, αλλά ο μουσακάς ήταν αηδία.  
 / to arnáci ítan télio\_ alá o musakás ítan aiDía./  
 'The lamb was divine, but the moussaka was disgusting.'

Gesture group: 'Let's go to eat'

A. - Πάμε για φαγητό; Μις κόβουν κάτι λόρδες!



B. - Εγώ θα ήθελα να τοιμηθώ κάτι, δεν περνάω πολύ.

Να μην αργήσουμε όμως.



A. - Κι εγώ δεν θέλω να αργήσω. Κόλλα το!

Θα φάμε μάνι μάνι.



Μετά από μία ώρα.

B. - Έφαγα πάρα πολύ. Είμαι ως εδώ!



A. - Το αρνάκι ήταν τέλειο, αλλά ο μουσακάς ήταν αηδία.

