Καλημέρα, kalimera or kalhmera?

A mixed methods study of Greek native speakers' attitudes to using the Greek and Roman scripts in emails and SMS

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Abstract

Although language attitudes are frequently investigated, how these attitudes change over time is studied less frequently, despite providing an interesting window into the link between attitudes and ideologies. Conducted some twenty years since the first studies on this topic, the current study provides an updated perspective into language attitudes toward the use of Roman-alphabetized Greek (henceforth, Greeklish) in emails and SMS messages exchanged between Greek native speakers. Adapting the matched guise methodology commonly used in language attitude research to visual stimuli, we collected data from 60 participants of different ages and genders. Overall, their attitudes toward Greeklish were markedly negative, confirming negative attitudes already expressed twenty years prior but also extending them. We propose that technological and demographic but also ideological factors underlie the negative attitudes toward Greeklish expressed by Greek native speakers today.

Keywords

Roman-alphabetized Greek – Greeklish – Digitally-Mediated Communication

1 Introduction

Borrowing a script developed to write down the sounds of one language to represent those of another is a recurring phenomenon across human history. A well-known case is Korean, which was originally written using Classical Chinese characters (Coulmas 1989, 115), while, closer to the topic at hand, the Greek script has been used to write down a form of Turkish spoken by the Karamanlides, a Greek-Orthodox, Turkish-speaking people native to Eastern Anatolia (Aytac 2014: 1). More recently, transliteration, that is, the one-to-one mapping of the graphemes of one writing system onto those of another (Wellisch 1975: x), has been evidenced within the context of Digitally-Mediated Communication (henceforth DMC; Herring 2008: xxxvi), as speakers of languages not using the standard Roman character set supported by early internet technologies have needed to develop new and creative ways of writing to communicate online. This phenomenon has been studied for Hong Kong Cantonese (Lee 2007), Egyptian Arabic (Warschauer, El Said, & Zohry 2007; Palfreyman & Khalil 2007; Björnsson 2010), Russian (Mironovschi 2007), and Urdu (Shakeel, Karim, & Khan 2019). As regards Greek, Roman-alphabetized Greek, commonly known as Greeklish, emerged in the early days of the Internet to meet this need, while, as technological capabilities evolved, it became a frequent, additional means of transliteration available to Greek native speakers in Greece and abroad to communicate online and in SMS messages (Androutsopoulos 2000: 80; Tseliga 2003). Although in recent years the use of Greeklish has become less prevalent (Androutsopoulos 2009: 247; Lees, Politis, & Koutsogianis 2017: 67), this unregulated spelling can still be detected in DMC platforms today.

This article explores the attitudes of Greek native speakers toward the use of Greeklish in DMC today. Considering that, compared with earlier decades, users of Greek now have the choice to type their messages in the original Greek script or in Greeklish, the indexicalities of these two alternative ways of writing Greek in the context of DMC, as well as native speakers' attitudes toward them, seem worth investigating. To do this, we adapted the Matched Guise Technique developed within language attitude studies (Lambert et al. 1960) to visual stimuli and used it to elicit attitudes toward Greeklish in two platforms (email and SMS). In addition, we used a purpose-built questionnaire to elicit evaluations of Greeklish by Greek native speakers directly. By combining indirect and direct elicitation in this way, we were able to document a change in attitudes to Greeklish over time, from an originally positive or neutral stance reported in earlier studies, to an unambiguously negative one today, with little difference between the two platforms in this regard. The results of this mixed methods study thus

speak to the context-dependence of language attitudes and the fact that they are dynamically formed in response to particular language ecologies (in this case, the newly-introduced possibility to use the Greek script, as well as the expansion of DMC beyond its traditional base of internet users in the late 1990's, following the success of new media such as SMS).

Section 2 sets the background for our study by reviewing existing literature on Greeklish and previous studies on attitudes toward it. Section 3 outlines our methodology, while section 4 presents the quantitative results of the matched guise test and the qualitative results of the questionnaire. These are compared with the findings of previous studies in section 5, while section 6 summarizes our conclusions, and discusses limitations of the current study and suggestions for further research.

2 Previous research on Greeklish

2.1 *The emergence of Roman-alphabeted Greek (Greeklish)*

The Roman script formed the basis of the American Standard Code for Information Interchange (ASCII code), which was established in the 1960s (Danet and Herring 2007: 9). The first computer systems operated on the aforementioned character set, which supported, apart from the basic Roman characters, some punctuation marks and a few digits and symbols (Tseliga 2007: 118). While favouring languages with a Roman alphabet-based writing system, the ASCII code caused problems for speakers of non-Roman-alphabeted languages (Koutsogiannis & Mitsikopoulou 2007: 144). Consequently, Greek-speaking computer users residing in Greece and abroad during the 1980s had no choice but to employ the Roman script in order to write Greek (Androutsopoulos 2009: 224). The Unicode Worldwide Character Standard, which was developed later, supported a wide range of scripts and languages, including Greek (Tseliga 2007: 118; John 2013). However, the switch from typing in Roman characters to typing in Greek did not happen overnight: since some hardware and software constraints continued to persist, not everyone had access to the aforementioned character-encoding system, and users continued to use the Roman alphabet throughout the 1990's (Androutsopoulos 2009: 224). Although mainly a feature of email and online chat communication, Greeklish was also featured in the formal electronic communication of government departments and universities into the late 1990's (Koutsogiannis & Mitsikopoulou 2007: 144), who used it in newsletters and formal university announcements (Androutsopoulos 2009: 225). It was also initially used in SMS texts by Greek mobile phone users, since the Greek script was not yet supported, while the Roman

script was pre-installed in most mobile phone devices (Laghos, Masoura, & Skordi 2012: 2). Familiarity with English, both on- and offline, also made Greeklish popular with younger generations (Koutsogiannis 2012: 886), with whom this type of spelling has been mainly associated (Koutsogiannis & Mitsikopoulou 2007: 144; Xydopoulos, Tzortzatos & Archakis 2019: 420).

2.2 *Transliteration patterns*

A dominant feature of Greeklish is its heightened variability, that is, the fact that many Greek graphemes representing both vowels and consonants, as well as combinations of these, such as digraphs and diphthongs, can be rendered in more than one way (Androutsopoulos 1998: 51–52). This heterogeneity can be attributed to the absence of a commonly accepted transliteration pattern, leading individuals to make idiosyncratic choices when composing their messages (Androutsopoulos 2000: 75). By 1998, different transliteration patterns had emerged for use within certain fields, such as linguistics and library science (Androutsopoulos 1998: 58).

Androutsopoulos (1998: 52) identifies two main transliteration patterns, a phonetically-based one and an orthographically-based one. The first one is based on correspondences between Greek phonemes and Roman characters (Androutsopoulos 2009: 232), only some of which coincide with official transliteration systems, such as the ELOT-standard, or academic ones, such as the standard of classical philology and/or linguistics (Androutsopoulos 1998: 52). Given that this pattern is based on sound resemblance (Chalamandaris et al. 2006: 1226), it considerably simplifies Greek historical orthography, especially as concerns the representation of vowels. For instance, the six different grapheme (combinations) <ι>, <η>, <υ>, <ει>, <οι>, <υι>, which stand for the sound /i/ in Modern Greek, are all represented in this transliteration pattern by the Roman symbol <i> (Androutsopoulos 1998: 53, 2009: 232).

On the contrary, the orthographic transliteration pattern retains Greek orthographic conventions and is based on correspondences between Greek and Roman graphemes (Androutsopoulos 1998: 53). This pattern is further divided into two sub-patterns, the visual one and the keyboard-based one. In the visual sub-pattern, Greek graphemes are rendered using Roman characters which are visually similar in shape, including numbers. For instance, the grapheme <ω>, which corresponds to the phoneme /o/, is replaced by the Roman character <w>. If a visually similar character is unavailable, Greek graphemes are represented by similar-looking numerals. For instance, the grapheme <θ>, which stands for the sound [θ], is transliterated using the number '8' (Androutsopoulos 2009: 232). In the keyboard-based sub-pattern, users transliterate according to the location of the characters on the keyboard, result-

ing in typing on a Roman-based keyboard the same way one would type on a Greek one (Tseliga 2003: 71). For instance, the Greek grapheme <υ>, which corresponds to the phoneme /i/, is replaced by the Roman character <y>.

Although individuals may opt for any of the aforementioned transliteration patterns or sub-patterns (Chalamandaris et al. 2006: 1226), it is also quite common to mix them within a single message (Androutsopoulos 1998: 55).¹ This aligns with the characterization of Greeklish as a culture-bound phenomenon which eschews standardization, fostering creative uses of spelling instead (Tseliga 2007: 137). Both linguistic and extralinguistic factors play a role in users' choices of (a) transliteration pattern(s) (Androutsopoulos 1998: 55). The grammatical function of the word or morpheme as well as the phonological environment, which seem to favour the phonetic transliteration pattern, belong to the former category, while gender, educational background, occupation as well as the relationship between sender and receiver belong to the latter (Androutsopoulos 1998: 55–58).

2.3 *Greeklish usage*

Since the Roman and Greek scripts are used to graphematically represent the same language, Greek, in two different ways (Tseliga 2007: 117), Greeklish can be considered a case of digraphia, defined by Coulmas (2003: 231) as “the use of two different scripts, writing systems or orthographies for the same language”. Androutsopoulos (2009: 227) proposes the term “computer-mediated digraphia” to specify that Greeklish occurs in the context of computer-mediated communication only.

The earliest studies regarding the use of Greeklish in DMC appeared in the late 1990's. Androutsopoulos (1998) was the first to document its use in email correspondence, while in a subsequent study (Androutsopoulos 2000), he found that Greeklish continued to be the norm among email users residing in Greece and abroad. Similarly, in Tseliga (2002), most Greek native speakers reported writing emails predominantly or even exclusively in Greeklish, a finding confirmed in Tseliga (2003). This trend was not particularly long-lived.

1 While mixing of different Romanized transliteration patterns occurs in Greek DMC, another possibility, namely the mixing of native and Roman scripts, which is common in Chinese, Japanese, and Korean writing, is not found in Greek (at least, inasmuch as it would be visible, given the partial overlap between Greek and Roman scripts). When such mixing occurs, this is done to fulfil specific communicative needs (e.g., to write a word, often a name, that cannot be adequately represented in the other script) and as such, it occurs across, not within, word boundaries taking the form of what we might call a ‘visual code-switch’. We thank an anonymous reviewer for raising this possibility and prompting us to add this clarification.

Investigating the choice of script by Greek adolescent/young mobile phone users, Spilioti (2007) found that almost all of the messages were typed in Greek, especially among users who texted frequently and were not particularly familiar with other platforms, while the limited number of participants who used Greeklish were better acquainted with technology and did not text very frequently. In a different study, Moustaka et al. (2010) found a split between secondary school students, many of whom employed Greeklish in their emails and SMS messages, and their Greek literature teachers, most of whom reported that they did not. Most recently, Xydopoulos et al. (2019) found that primary school students in Greece use Greeklish in emails, on mobile phones and on social media, while their parents and teachers use it to a very limited extent. Apart from email correspondence and SMS messages, Greeklish has also been evidenced in a variety of platforms, such as chat rooms (Moustaka et al. 2010; Koutsogiannis 2015), forums (Moustaka et al. 2010), on Facebook (Lees et al. 2017), in e-chat IRC exchanges (Goutsos 2005), and on YouTube (Laghos et al. 2012). Koutsogiannis (2015) found that students used Greeklish in chat rooms and on Facebook more than they did in SMS messages.

Transnational and diasporic communities seem to especially favour similar informal transliterations (Androutsopoulos 2006: 429). Early instances of Greeklish use include email exchanges between Greeks residing in the U.K. (Georgakopoulou 1997), and online chat between adolescents/young adults and second/third generation immigrant children and students in Germany (Androutsopoulos & Hinnenkamp 2001). Greeklish is also used by Greek Cypriots residing in Cyprus and abroad to represent Cypriot Greek, which is phonologically distinct from Standard Modern Greek, in online chat (Themistocleous 2009, 2010, 2013) and on Facebook (Sophocleous & Themistocleous 2014).

2.4 *Attitudes to Greeklish*

In addition to studies documenting the use of Greeklish on various new media, a few studies have investigated the attitudes of Greek native speakers toward Greeklish in the context of DMC. Using an electronically distributed questionnaire, Androutsopoulos (2000) concluded that participants found writing emails in Greeklish easier and faster, a view echoed by the participants in Tseliga's (2002) e-mail questionnaire survey. In a follow-up study using an interview methodology, Tseliga (2003) found that email users of the orthographic transliteration pattern regarded Greeklish as a playful, challenging, and attractive linguistic novelty, and respondents overall found this type of spelling easier, faster, and more convenient, a view echoed by participants in Spilioti (2007) and Koutsogiannis (2015). The view that Greeklish allows composing messages rapidly was also expressed by secondary school students

in the questionnaire survey of Moustaka et al. (2010), and in the questionnaire and interview surveys of Lees et al. (2017). In the most recent study, by Xydopoulos et al. (2019), primary school students also expressed a positive attitude toward Greeklish, finding it useful for writing on computers and mobile phones, especially since no spelling mistakes can be made, a view shared by participants in the studies by Moustaka et al. (2010), Koutsogiannis (2015), and Lees et al. (2017). Using a social treatment approach, which tracked attitudes to Greeklish in texts published in various Greek newspapers, Koutsogiannis and Mitsikopoulou (2007) found that, for some authors, one of the positive features of Greeklish is that it fosters creativity and serves as an in-group-identity marker.

These generally positive attitudes toward Greeklish are not unanimous. In Tseliga's (2003) study, Greeklish, especially the phonetic transliteration pattern, was thought to be used to cover up email users' spelling mistakes, which may not be unrelated to some participants' negative attitudes toward Greeklish in that study. Phonetic Greeklish in particular was regarded as aesthetically distasteful and annoying—even “monstrous” (Androutsopoulos 2009)—and as an unconventional way of writing that obstructs and impairs the quality of communication among Greeks (Tseliga 2002), echoing similar statements by participants in Androutsopoulos (2000). Interestingly, Androutsopoulos found that it was mainly the older respondents who considered Greeklish to be “ugly”, whereas younger participants did not necessarily agree. Furthermore, many participants considered Greeklish to be a “necessary evil”, whereas a few, mostly older, participants viewed it as a “problem” and a “threat” to the Greek language. This view was paralleled by a significant trend among authors in Koutsogiannis and Mitsikopoulou's (2007) societal treatment study, who opposed globalization and modern technologies, and for whom Greeklish “attacks” and poses a threat not only to the Greek language but also to the Greek nation itself. Similar views were expressed in other studies (Moustaka et al. 2010, Koutsogiannis 2015; Lees et al. 2017; Xydopoulos et al. 2019), especially by teachers and students' parents.

Further to criticisms of Greeklish as “ugly” and a “threat” to the Greek language, another reason why some participants expressed negative attitudes toward Greeklish was readability. In Androutsopoulos's (2000) study, reading Greeklish was considered harder and more tiring than writing it, with older participants facing greater difficulties in this respect. Similar views were expressed by participants in Tseliga (2002, 2003) and Lees et al. (2017). Participants made a difference between phonetic and orthographic transliteration patterns in this regard, considering orthographically transliterated Greeklish easier to read and to remember.

Finally, studies found that some participants remained neutral vis-à-vis the use of Greeklish, regarding it as a useful tool that suits them and assists them in their email communication (Tseliga 2002, 2003). Similarly, in Androutsopoulos (2000), the vast majority of email users agreed that Greeklish is “just an instrument” for email communication, a statement with which women agreed more than men. Similar statements were made by participants in Moustaka et al. (2010) and Lees et al.’s (2017) questionnaire-based studies, as well as in Koutsogiannis and Mitsikopoulou’s (2007) societal treatment study.

In sum, Roman-alphabetized Greek, or Greeklish, emerged early on in email communication among native speakers of Greek due to the technological limitations affecting the use of non-Roman scripts in the early days of the internet. In terms of transliteration, two main patterns can be identified: the phonetic one, based on phonetic resemblance, and the orthographic one, based on visual resemblance, with two sub-patterns, the visual and the keyboard-based one. Since the introduction of Unicode in the early 1990’s, which allows users to compose messages in their native scripts, Greeklish has continued to be used alongside the Greek script to type messages in Greek. Greeklish continues to be popular among the young and those living in diasporic communities, while teachers and parents report using it less. Users are also split to some extent along generational lines when it comes to attitudes toward Greeklish, with younger users finding it easier to use overall, and older users finding it not only harder to use but also uglier and a threat to the Greek language.

3 Methodology

3.1 *Research design*

In the studies summarized above, participants’ attitudes toward Greeklish were elicited directly, by means of interviews or questionnaires which explicitly ask participants their views about the topic under investigation.² This may have resulted in the reproduction of normative attitudes, since direct elicitation of language attitudes is well-known to suffer from the social desirability and acquiescence biases common to much of social science research (Garrett 2010: 44–45). To obtain a comprehensive picture of attitudes to Greeklish, we opted to elicit Greek native speakers’ attitudes via a combination of direct (questionnaire) and indirect (matched guise) measures. To this end, we adapted the Matched Guise Technique—originally developed by Lambert et al. (1960) to

2 Koutsogiannis & Mitsikopoulou’s (2007) societal treatment study is an exception in this regard.

examine the effects of speech variation on stereotyping members of different ethnolinguistic groups (Lambert 1967: 93)—to study attitudes to scriptal variation (Spitzmüller 2012). One of the main benefits of this technique is that it allows a great degree of transparency to listeners’ “private emotional and conceptual reactions” (Lambert et al. 1965: 90). Participants are not asked to evaluate a particular way of using language directly, as in a questionnaire study, but rather the personality of a person using it. In this way, their evaluative reactions to it are probed with minimal interference by their metalinguistic awareness of what it is they are judging. To investigate attitudes toward different ways of writing a language (digraphia; see section 2.3), rather than listening to the same extract spoken in different language varieties or accents, participants in our study saw the same text in different spellings and were asked to evaluate the author of the text on various dimensions.

3.2 *Materials*

3.2.1 *Stimuli*

The present study investigated the use of Greeklish in emails and SMS. By investigating its use in two different platforms, we aimed to reach generalizable conclusions regarding attitudes to Greeklish that are not restricted to one or the other platform. Original email and SMS messages were retrieved from exchanges between the first author and her friends, and three emails and three SMS messages, each written by a different person, were selected to serve as stimuli. In the emails, the sender provided the recipient with some information about a city that the former had visited in the past. In the SMS texts, the sender suggested making plans together with the recipient.

Since all of the texts had originally been written in the Greek script, they were rendered in Roman characters using the two transliteration patterns introduced in Section 2.2, creating three manipulations or “guises”: Greek, Greeklish-Ph(onetic) and Greeklish-O(rthographic). The emails and SMS messages were minimally adapted to be comparable in text length and the number of selected Romanized characters occurring across their three guises, while in all other respects (punctuation, abbreviations used) they were unchanged from the originals. The number of words in each message was kept constant between 35 and 40 words. Additionally, graphemes and grapheme combinations which are rendered differently in the two transliteration patterns were controlled so as to occur with equal frequency across the three emails and across the three SMS messages. Specifically, the frequency of eight graphemes was kept constant across the three emails and across the three SMS. For the emails, these were the three vowel graphemes <η, ω, υ>, three vowel digraphs <οι, ει, αι> and two consonant graphemes <χ, β>, while for the SMS, they were the three vowel graphemes

TABLE 1 Critical Greek graphemes with corresponding transliteration according to the phonetic or orthographic pattern and frequency of occurrence of each grapheme in the email and SMS stimuli

Greek graphemes	Greeklish-Ph (source)	Greeklish-O (source)	Occurrences per email	Occurrences per SMS
η	i (Androutsopoulos 2009)	h (Androutsopoulos 1998)	6	4
υ	i (Androutsopoulos 2009)	y (Androutsopoulos 1998)	3	2
ω	o (Androutsopoulos 2009)	w (Tseliga 2003)	4	4
αι	e (Androutsopoulos 1998)	ai (Androutsopoulos 1998)	3	3
ει	i (Androutsopoulos 2009)	ei (Androutsopoulos 2009)	6	4
οι	i (Androutsopoulos 2009)	oi (Androutsopoulos 2009)	1	-
ου	u Androutsopoulos (2009)	oy Androutsopoulos (2009)	—	2
β	v (Androutsopoulos 2009)	b (Androutsopoulos 2009)	1	1
μπ	b Androutsopoulos (1998)	mp Androutsopoulos (1998)	—	1
χ	h (Tseliga 2003)	x (Androutsopoulos 2009)	3	-

⟨η, ω, υ⟩, three vowel digraphs ⟨οι, ει, ου⟩, the consonant grapheme ⟨β⟩, and the consonant digraph ⟨μπ⟩. The critical graphemes used in the stimuli along with the number of times they occurred in each email and SMS message are shown in Table 1.

To enhance the ecological validity of the results, in the online survey used to collect the data, the email messages were presented as a screenshot of an email user's computer screen and the SMS messages as a screenshot of a mobile phone, respectively. An example of an email message in the three guises followed by an English translation is shown in figures 1a–d below, followed by an example of an SMS message in figures 2a–d (for the full list of stimuli, see Appendix A).

Άννα,
 γειά σου! Το Δουβλίνο είναι μικρό επομένως έχεις μέρες να το απολαύσεις απ' άκρη σ' άκρη όσο είσαι εκεί. Εγώ πήγα στους κοντινούς προορισμούς γιατί δεν μπορούσα οικονομικά δυστυχώς να στηρίξω άλλα ταξίδια, αν και θα το ήθελα!

Καληνύχτα!

FIGURE 1A Email example: Greek guise

Anna,
 gia su! To Duvlino ine mikro epomenos ehis meres na to apolafsis ap' akri s' akri oso ise eki. Ego piga stus kontinus proorismos giati den borusa ikonomika distihos na stirikso alla taksidia, an ke tha to ithela!

Kalinihta!

FIGURE 1B Email example: Greeklish-Ph guise

Anna,
 geia sou! To Doublino einai mikro epomenws exeis meres na to apolayseis ap' akrh s' akrh oso eisai ekei. Egw phga stous kontinous proorismous giati den mporousa oikonomika dystyxws na sthriksw alla taksidia, an kai tha to ithela!

Kalhnixta!

FIGURE 1C Email example: Greeklish-O guise

Anna,
 hi! Dublin is so small that you've got plenty of days to enjoy it while you're there. Unfortunately, I only visited the places nearby because I couldn't afford any more trips, even though I would love to!

Goodnight!

FIGURE 1D Email example: English translation (not seen by the participants)

9 Ιαν 2019, 11:38 πμ

Καλημέρα Σοφία!!! Εγώ είμαι
χωριό πάω ταχυδρομείο
άργησα αρκετά και πήγα κ πήρα
ένα καφέ
αν δε βαριέσαι κ μπορείς να
πάμε να πιούμε ένα πρωινό χυμό
στείλε μου

FIGURE 2A
SMS example: Greek guise

9 Ιαν 2019, 11:38 πμ

Kalimera Sofia!!! Ego ime
horio pao tahidromio
argisa arketa ke piga k pira
ena kafe
an de variese k boris na
pame na piume ena proino himo
stile mu

FIGURE 2B
SMS example: Greeklish-Ph guise

9 Ιαν 2019, 11:38 πμ

Kalhmera Sofia!!! Egw eimai
xwrio paw taxydromeio
arghsa arketa kai phga k phra
ena kafe
an de bariesai k mporeis na
pame na pioume ena prwino xymo
steile mou

FIGURE 2C
SMS example: Greeklish-O guise

9 Ιαν 2019, 11:38 πμ

Good morning Sophie!!! I'm in
town I'm heading to the post office
I was late and went to grab
a coffee
if you're not bored and you're free
let's go and have a juice
text me

FIGURE 2D
SMS example: English translation (not seen
by the participants)

3.2.2 Rating task design

After reading the three email and three SMS messages in only one of their guises each, participants were asked to indicate on a Likert scale the degree to which the authors of the messages possessed a number of traits. To determine which traits were more appropriate to use in this matched guise task, a pilot study with eight participants of different genders and ages was conducted. It consisted of three surveys, in which the three emails appeared first, followed by the three SMS messages. Each survey contained three different emails in a different spelling each, and three different SMS messages, also in a different spelling each. No email or SMS message appeared more than once in the same survey. The structure of the pilot thus reflected that of the main matched guise task (see Section 3.4 below) except for the last part: after reading each email/SMS message, in the pilot study respondents did not evaluate the author of the message but were rather asked to choose among 11 adjectives those that best described the author. These adjectives were drawn from a pool of adjectives used in previous studies on English.³ In follow-up discussion, participants were asked whether they had found any of the adjectives hard to understand or inappropriate, as well as what characteristics they themselves would attribute to someone who writes in Greeklish. The findings of this pilot study were combined with those of previous studies to yield the final set of adjectives used in the rating task, making sure that the selected adjectives reflected the three dimensions of *superiority*, *attractiveness* and *dynamism* identified by Zahn and Hopper (1985) as the most common organizing dimensions used in matched guise studies overall. In total, eight adjectives were selected, five representing a negative trait and three representing a positive one (Table 2).

3.3 Participants

Adult native speakers of Greek were recruited using the snowball sampling technique (Biernacki & Waldorf 1981). In total, 60 participants completed the online survey. Tables 3–5 show their gender, age and educational background, as reported by them at the end of the survey (Appendix B).

3 Since a direct translation of the English term did not always capture the same content as the Greek term, a selection of the best translational equivalents of the English terms in Greek was made.

TABLE 2 Greek adjectives used in the matched guise task

Dimension	Greek term used	English equivalent
Superiority	καλλιεργημένος/η υπερόπτης	cultivated arrogant
Attractiveness	συμπαθητικός/ή απότομος/η	likeable curt
Dynamism	βιαστικός/ή εξωστρεφής συντηρητικός/ή τεμπέλης/α	hasty outgoing conservative lazy

TABLE 3 Participants by gender

Gender	Participants
Men	12
Women	48
Total	60

TABLE 4 Participants by age

Age	Participants
18–25	20
26–35	24
36–50	8
>50	8
Total	60

TABLE 5 Participants by educational level

Educational level	Participants
Secondary education	4
Undergraduate studies	38
Postgraduate studies	18
Total	60

3.4 *Procedure*

3.4.1 Matched guise rating task

As explained, the stimuli consisted of three emails and three SMS messages presented in three guises each (Greek, Greeklish-Ph and Greeklish-O) for a total of 18 guises. To limit fatigue, a block design was used, in which these 18 guises were distributed over six blocks consisting of three emails and three SMS messages each. Each participant saw only one block. In three of the blocks the email messages appeared first, and in the other three, the SMS messages appeared first. Within each block, the three emails appeared with a different spelling and their order was randomized; for instance, if the first email was written in Greeklish-Ph, the second one was written in Greek and the third in Greeklish-O; and so on for the three SMS messages. Since the content was kept constant across the three emails (travel) and across the three SMS messages (making plans), any differences in participants' ratings could be attributed to the different spelling used rather than to the content of the message, which was kept similar for each platform. The six blocks were designed using Qualtrics (<https://www.qualtrics.com/>) and embedded within a single survey that was distributed electronically. In this way, each email and SMS guise was seen by 20 participants, while no participant saw an email or SMS in more than one of its guises.

After clicking on the survey link, participants saw a consent form. Having agreed to participate, they could move on to the next page and begin the matched guise task. First, a message appeared in one of the three guises and participants were asked to write down their first impressions about the author of the message. On the following page, while the message remained on the screen, the rating scales for the eight adjectives appeared underneath it, allowing respondents to complete the rating task while still seeing the message. Here, participants were asked to evaluate the author of the message on the eight adjectives shown in Table 2, by choosing one of the options ranging from 1: not at all (*καθόλου*) to 6: very much (*πάρα πολύ*) (Fig. 3).

	1					6
	καθόλου					πάρα πολύ
καλλιεργημένος/η	☐	☐	☐	☐	☐	☐
υπερόπτης	☐	☐	☐	☐	☐	☐
βιαστικός/ή	☐	☐	☐	☐	☐	☐
εξωστρεφής	☐	☐	☐	☐	☐	☐
συντηρητικός/ή	☐	☐	☐	☐	☐	☐
τεμπέλης/α	☐	☐	☐	☐	☐	☐
συμπαθητικός/ή	☐	☐	☐	☐	☐	☐
απότομος/η	☐	☐	☐	☐	☐	☐

FIGURE 3 Rating scales for the eight adjectives used in the matched guise task

Having completed the matched guise rating task, participants were asked to speculate about the gender, age, and educational level of the message's author, as well as to indicate whether they had any difficulty reading the message themselves. Lastly, they were asked whether they found anything strange in the message they had just read.

3.4.2 Questionnaire

The second part of the survey consisted of a questionnaire with both open and closed questions. Unlike the matched guise task just described, which elicited participant attitudes indirectly, this second part aimed to elicit information about participants' demographic background, their email and SMS usage, their preferences regarding script use in these media, and their attitudes toward Greeklish directly (Appendix B). At the end of this questionnaire, participants were asked again whether they found anything strange in the messages they had read in the first part. The whole survey took about 25 minutes to complete.

TABLE 6 Mean values for participants' evaluations of authors using the Greek, orthographic Greeklish, and phonetic Greeklish transliteration patterns in emails and SMS (mean range shown in parenthesis; 1=not at all – 6=very much)

	Greek		Greeklish-O		Greeklish-Ph	
	Email	SMS	Email	SMS	Email	SMS
cultivated	4.7 (4.3–5.1)	3.7 (3.5–3.9)	3.7 (2.9–4.4)	3.2 (3.0–3.5)	2.8 (2.1–3.5)	2.5 (2.3–2.9)
arrogant	1.8 (1.4–2.3)	1.7 (1.6–1.9)	1.6 (1.4–1.9)	1.5 (1.1–1.9)	1.8 (1.5–2.2)	1.9 (1.6–2.2)
likeable	4.2 (4.1–4.5)	4.2 (4.0–4.8)	4.0 (3.2–4.4)	4.0 (3.6–4.3)	3.5 (3.1–4.2)	3.7 (2.9–4.6)
curt	2.0 (1.7–2.4)	2.2 (1.7–2.6)	1.9 (1.6–2.4)	2.2 (2.0–2.5)	2.3 (2.2–2.6)	2.6 (2.1–3.2)
hasty	2.5 (1.8–3.2)	3.3 (2.0–4.0)	2.7 (2.1–3.7)	3.7 (3.3–4.1)	3.5 (3.0–4.1)	3.8 (3.4–4.2)
outgoing	3.7 (3.4–4.2)	4.3 (3.9–4.9)	3.9 (3.6–4.2)	4.1 (3.8–4.4)	3.7 (3.1–4.3)	4.0 (3.6–4.8)
conservative	2.4 (1.9–2.7)	1.9 (1.8– 2.2)	2.0 (1.9–2.2)	2.0 (1.9–2.1)	2.0 (1.9–2.2)	2.0 (2.0–2.1)
lazy	1.6 (1.5–1.9)	2.2 (1.6–2.7)	2.2 (2.0–2.4)	2.6 (2.0–3.0)	2.8 (2.3–3.3)	3.1 (2.5–3.7)

4 Results

4.1 Matched guise task results

4.1.1 Author trait evaluations

As mentioned in Section 3.4.1, participants were asked to rate the email and SMS authors on a range of adjectives reflecting three dimensions: superiority (represented by the adjectives “cultivated” and “arrogant”), attractiveness (represented by the adjectives “likeable” and “curt”), and dynamism (represented by the adjectives “hasty”, “outgoing”, “conservative” and “lazy”). Table 6 shows the mean values for participant evaluations of the authors in the three guises. Overall, there were no statistically significant differences between participants based on gender, age, and educational level in these judgements (see Appendix C).

TABLE 7 Assumed author’s gender, age and educational level for authors using the Greek, orthographic Greeklish, and phonetic Greeklish transliteration patterns in emails and SMS (percent responses)

Authors hypothesized to be ...	Greek		Greeklish-O		Greeklish-Ph	
	Email	SMS	Email	SMS	Email	SMS
Women	63.3	75	56.7	65	40	51.7
Men	37.7	25	43.3	35	60	48.3
Aged 18–25	13.3	18.6	36.7	30	51.7	38.3
Aged 26–35	60	39	50	38.3	35	26.7
Aged 36–50	26.7	20.3	11.7	21.7	8.3	21.7
Aged >50	–	22	1.7	10	5	13.3
Poorly educated	8.3	43.3	66.7	73.3	65	50
Highly educated	91.7	56.7	33.3	26.7	35	50

As Table 6 shows, the biggest divergences in these judgements concern evaluations for “cultivated”: those using the Greek script were evaluated as more cultivated compared with users of Greeklish in both platforms. In this regard, a gradual decline in judgements is noted: while authors using the Greek script were regarded as the most cultivated and those using phonetic Greeklish as the least cultivated, those using orthographic Greeklish lay somewhere in between. We return to this finding below. Other divergences concern the likeability and hastiness of those using phonetic Greeklish, who were judged less likeable and more hasty irrespective of platform, and the laziness of SMS authors. This last finding may have to do with the more informal style of the SMS messages, which were originally exchanged between close friends and made use of abbreviations (e.g., “κ” for και = ‘and’).

4.1.2 Assumed authors’ gender, age and educational level

Having evaluated the authors on the eight adjectives above, participants were asked to speculate about their gender, age, and level of education. Table 7 shows the percentage breakdown of responses for each of these categories.

As Table 7 shows, the most striking discrepancy here concerns judgements regarding the educational level of the authors. The authors of messages typed in Greek were assumed almost unanimously to be highly educated, while judgements for those using Greeklish went the opposite way. In other words, using Greeklish negatively impacted assumptions about the author’s level of

TABLE 8 Level of reading difficulty of the email and SMS messages in the Greek, orthographic Greeklish, and phonetic Greeklish transliteration patterns by participant age (percent responses)

Participant age	Reading difficulty	Greek		Greeklish-O		Greeklish-Ph	
		Email	SMS	Email	SMS	Email	SMS
18–25	Very easy	75	55	25	25	10	10
	Easy	25	40	40	65	40	55
	Rather difficult	–	5	35	10	30	25
	Very difficult	–	–	–	–	20	10
26–35	Very easy	87.5	66.7	33.3	37.5	16.7	30.4
	Easy	4.2	20.8	41.7	45.8	37.5	39.1
	Rather difficult	8.3	12.5	25	12.5	45.8	21.7
	Very difficult	–	–	–	4.2	–	8.7
36–50	Very easy	62.5	37.5	37.5	12.5	–	–
	Easy	25	37.5	25	25	37.5	62.5
	Rather difficult	–	25	25	50	50	12.5
	Very difficult	12.5	–	12.5	12.5	12.5	25
>50	Very easy	62.5	62.5	12.5	12.5	12.5	37.5
	Easy	25	12.5	37.5	37.5	37.5	–
	Rather difficult	12.5	25	37.5	37.5	50	62.5
	Very difficult	–	–	12.5	12.5	–	–

education. This trend was more pronounced for authors of emails compared with SMS, suggesting that the latter were judged more tolerantly. This could be a result of the informality of the medium combined with the perceived informality of the content of these messages (see also Section 4.1.1). Other noticeable trends concern the estimated gender and age of the authors of messages in phonetic Greeklish, who were generally assumed to be younger men, irrespective of platform. This gender and age bias may well reflect stereotypes of young men as more technically minded and less observant of standard language norms.

4.1.3 Readability of the messages

In the last part of the matched guise task, participants were asked to rate the readability of the messages, ranging from “very easy” to “very difficult”. Table 8 shows the percent participant responses for the email and SMS messages in the three guises broken down by participant age.

As Table 8 shows, messages typed in Greek were, unsurprisingly, found to be “very easy” to read by the majority of respondents in all age groups. However, readability drops for messages typed in Greeklish. Messages typed in Greeklish were found to be increasingly difficult to read as we shift from orthographic to phonetic Greeklish, and this difficulty increases with participant age. Messages in phonetic Greeklish, in particular, were found to be “difficult” to read half the time or more by the oldest participants (>50), irrespective of platform.

Summing up, the quantitative analysis of participant responses to the matched guise part of the survey reveals that participant attitudes toward messages typed in Greeklish are overall rather negative. This negativity manifests itself primarily in relation to judgements regarding the author as (less) “cultivated” and their assumed (poor) level of education, as well as the perceived (low) readability of the messages. These judgements are more extreme in the case of phonetic Greeklish, whereas differences between the email and SMS platforms appear to be attributable, primarily, to the informality of SMS as a medium. The next section provides some insight into possible explanations for these findings.

4.2 *Participants’ qualitative comments*

Participants’ qualitative comments were elicited in two instances, once before the matched guise part of the survey and a second time immediately after it. All 60 participants left optional comments immediately after seeing a message, of whom 52 additionally left comments after having assessed the authors. Overall, many respondents indicated that they found using Greeklish in emails weird. Specifically, initial comments to emails typed in Greeklish-Ph most frequently focused on the author’s poor level of Greek and of Greek spelling. This type of transliteration pattern was characterized as “simplified” and “misspelled” and was attributed to the influence of English. Respondents found it “irritating”, “annoying”, “tiring”, and a distraction, and considered the author to be bored or trying to seem “in” for some childish reason. Most of these comments were made by women. Only one respondent, who reported using both Greek and Greeklish in her own emails/SMS, attributed the author’s choice to write in Greeklish-Ph to “some other reason” and not to lack of knowledge of Greek spelling rules. A noteworthy comment by a young man was that the email author using Greeklish-Ph must have been born in the 1980’s or 90’s, because, according to him, writing in Greeklish-Ph is uncommon among younger people, especially in emails. Similar comments were made about the authors of the Greeklish-Ph SMS messages. This time, respondents found the use of Greeklish “unacceptable”, “confusing”, “weird”, and resulting in “difficult communication”.

Emails using the orthographic Greeklish transliteration pattern were similarly found to be weird and “annoying”. However, this time younger participants commented that, despite using Greeklish, the authors were aware of Greek spelling rules. Some respondents attributed the use of this type of transliteration pattern to the fact that the author had lived abroad and to the impact of English. Similarly, for the Greeklish-O SMS messages, participants noted that, although the authors knew Greek spelling, they opted for the “convenience” of Greeklish. However, they still found Greeklish-O unusual and “tiring” in SMS messages, with one older participant commenting that “the young individual” who used Greeklish “abused” the Greek language.

After their views on Greeklish had been directly elicited by means of a questionnaire (see section 4.3 below), participants had the opportunity to review all the emails and SMS messages one last time and to indicate whether they found anything weird about them as a whole (Appendix B, Question 20). These post-facto comments were thus informed by participants’ metalinguistic awareness of the topic of the investigation. Twenty participants left such optional comments. The most frequently expressed view in this third round of qualitative comments was that they found the use of Greeklish unusual and repulsive. Some participants added that, in general, messages written in Greeklish were “non-comprehensible”, “tiring”, “irritating”, and “hard to read”, and one participant stated that she could not think of a reason to use it, especially for Greeks. Another participant, who reported using both Greek and Greeklish herself, noted that it would make a worse impression on her if she saw messages written in misspelled Greek. This implicitly echoes participants’ earlier view that Greeklish can be used to “hide” one’s ineptitude with Greek spelling.

4.3 *Directly elicited attitudes toward Greeklish*

In the second part of the study, participants’ attitudes toward Greeklish were elicited directly by means of a questionnaire (Appendix B). In addition to providing us with background information about the participants (Questions 1–7), this allowed us to ask some questions about their own email/SMS usage (Questions 8–19). Overall, respondents reported either not using email/SMS or only employing the Greek script when they do so. Only four participants reported using both Greek and Greeklish in their emails/SMS. In response to the question why they use either the Greek or the Roman script or both in their own emails (Question 13) and SMS messages (Question 19), participants using the Greek script most frequently responded that they find Greeklish hard to read, write, and comprehend. Participants considered Greeklish less formal compared with Greek or just plainly wrong. Typing in Roman characters was also considered time-consuming and less efficient for communication purposes.

One respondent opposed Greeklish by referring to the richness of the Greek language and suggested that “we” should use Greek on a daily basis. He further added that using Greeklish denotes laziness and, for older generations, an unwillingness to change an already established way of writing. Another participant thought Greeks should write in Greek, since the Roman script impoverishes and corrupts the Greek language. An interesting comment was that, unless Greeklish is used by one who does not know Greek, it is not useful at all. Coupled with comments that “we”/“Greeks” should write in Greek, and that use of Greeklish signals an unwillingness to change an already established habit, these comments suggest an ‘othering’ of authors who write in Greeklish as somehow ‘deviant’ compared to today’s Greek DMC norms.

5 Discussion

Overall, the results of our mixed methods study suggest a shift in adult Greek native speakers’ use of, and attitudes to, Greeklish. From being the normal mode of composing one’s messages twenty or even just ten years ago (Androutsopoulos, 2000; Tseliga, 2002, 2003; Moustaka et al. 2010), Greeklish is no longer used widely by speakers today to compose their emails and SMS messages. Rather, they show a marked preference for the Greek script in both platforms. These findings are in line with those of recent studies by Spilioti (2007), Koutsogiannis (2015), and Xydopoulos et al. (2019).

In addition to a shift in usage, Greek native speakers’ attitudes to Greeklish have shifted. Participants now find writing, reading, and comprehending a message typed in Greeklish hard and tiring. A similar view was expressed by participants in Androutsopoulos (2000). However, in that study younger participants reported difficulty mainly writing, not reading, Greeklish (older participants found both of them difficult), whereas in the current study younger participants find reading Greeklish difficult too, especially for phonetic Greeklish (Table 8). This is in line with Lees et al.’s (2017) study of secondary school students, who found Greeklish hard to read, suggesting that reading Greeklish has become harder for everyone. This is not surprising, given psycholinguistic findings that extensive experience with a recently developed artificial writing system can lead to its non-effortful processing (Dimitropoulou, Duñabeitia, & Carreiras 2011: 735). If seeing Greeklish has now become relatively rare as a result of the shift in usage noted above, this may well justify a decline in its readability as well.

The general tendency to consider typing in Greek easier in this study is also in contrast with earlier findings (Androutsopoulos 2000; Tseliga 2002, 2003;

Spilioti 2007; Moustaka et al. 2010; Koutsogiannis 2015; Lees et al. 2017). Participants in those earlier studies generally found typing in Greeklish faster and time-saving, while participants in our study did not attribute use of Greeklish to hastiness to any significant extent in their matched guise ratings and one respondent even commented that typing in Greeklish is time consuming.

On the other hand, our participants found Greeklish less formal than Greek and lacking in prestige. There is no change in attitudes in this regard from the earlier studies, which found Greeklish to be informal and appropriate for communicating with friends, while Greek is preferred in formal contexts (Tseliga 2003). Another aspect of participants' attitudes that has not changed is their concern, voiced already in earlier studies, that using Greeklish impoverishes and corrupts the Greek language (cf. Androutsopoulos 2000; Koutsogiannis & Mitsikopoulou 2007; Moustaka et al. 2010; Lees et al. 2017). Related to this is the view that, by using Greeklish, Greeks forget how to write correctly in their native script, expressed in the current and in previous studies alike (Tseliga 2003; Moustaka et al. 2010; Koutsogiannis 2015; Lees et al. 2017; Xydopoulos et al. 2019).

Notably, when it comes to knowledge of the Greek language and Greek spelling, attitudes toward the phonetic and orthographic transliteration patterns diverge. In our results, only the phonetic transliteration pattern is closely associated with inadequate knowledge of Greek and described as "simplified" and "misspelled". Phonetic Greeklish elicited similar comments in Androutsopoulos (2000, 2009) and Tseliga (2003). Conversely, orthographic Greeklish was associated with good knowledge of Greek spelling rules, echoing again similar statements in Tseliga (2003). This suggests that a possible reason for penalizing authors using phonetic Greeklish in our study on several levels (readability, level of education) is the fact that this transliteration pattern breaks with (historical) Greek orthography. Conversely, the fact that the orthographic transliteration pattern maintains this orthography could explain its overall more positive evaluation by Greek DMC users.

An interesting finding of the more recent studies (ours and that of Xydopoulos et al., 2019) is that the authors of the Greeklish messages—especially those using phonetic Greeklish—are regarded as younger than 35, repeated in qualitative comments that the messages were written by young people. This age gradation, with older participants generally refraining from using Greeklish and being rather averse to its use by others, may not be simply a matter of familiarity and exposure. Although young people can generally be assumed to be spending more hours on social media and therefore to be potentially exposed to more diverse ways of typing Greek compared with their parents, this finding may also be attributable to ideological reasons. Specifically, it is possible

that normative attitudes favoring the standard language and standard spelling are generally prevalent among older speakers, while they are relaxed among adolescents. As such, adolescents' more positive attitudes toward Greeklish today vis-à-vis those of their parents (Xydopoulos et al., 2019) could well be due to very different reasons compared with the positive attitudes to Greeklish reported a couple of decades ago, which can be attributed to the technological limitations of the time (Section 2.1). This question remains to be explored in future research.

6 Conclusion

Greeklish (the use of the Roman script to write Greek) emerged in the early days of the internet in response to the need to communicate online in Greek before the use of the Greek (and other non-Roman) script(s) was made technically possible with the introduction of Unicode in the early 1990's. Since then, a number of studies have tracked Greek native speakers' use of, and attitudes to, Greeklish. The aim of this study was to elicit the attitudes of adult Greek native speakers toward Greeklish today and relate them both to their demographic background and reported usage. To this end, a modified matched guise test was administered through an online survey to 60 participants, in which, instead of listening to speech samples, participants saw emails and SMS messages written in three different modes of transliteration: Greek, orthographic Greeklish and phonetic Greeklish. This was the first time, compared with previous studies which elicited participant attitudes to Greeklish directly, that the attitudes of native speakers were tracked indirectly, that is, in an unselfconscious way.

This innovative application of the matched guise technique, combined with direct elicitation by means of a questionnaire, revealed a sharp downturn in Greek native speakers' reported usage of Greeklish, but also a change in their attitudes toward it. Previously positive attitudes relating to ease of typing, readability, and speed have now been replaced by their opposites, while previously reported negative attitudes regarding the detrimental effect of Greeklish on native speakers' spelling abilities and its diminished status compared with the Greek script continue to persist. These evaluations hold across our sample of participants irrespective of age and gender, as well as across the two platforms investigated (emails and SMS). Importantly, those using Greeklish today are viewed as less cultivated than those using the Greek script, although participants also differentiated between the phonetic and orthographic transliteration patterns in this regard, associating lack of education more with the former and less with the latter.

Further to a combination of direct and indirect measures, we explicitly designed our study as a mixed-methods study combining quantitative and qualitative responses by participants, in order to triangulate our results and gain a deeper understanding of the quantitative trends in our data. Their qualitative comments showed that our participants find the use of Greeklish unjustifiable and a remnant of the past, or a sign of laziness and of poor knowledge of Greek spelling rules associated with the young and with those who have not (yet) mastered the language, such as non-native speakers. In this way, using the Greek script becomes a marker of belonging for Greek native speakers in DMC, with those not using it being perceived as somehow 'other' (in terms of generation, ethnic background, or overall language ability).

Our study is of course not devoid of limitations. Although they were recruited online and resided in different cities, our sample of 60 participants was relatively small and biased toward women under 35 and cannot be taken to represent the attitudes of all Greek native speakers. Moreover, adolescents, who are reported to be generally favorable toward Greeklish (Xydopoulos et al. 2019), were not included in our sample. Future studies could benefit from including larger and more diverse samples of participants. Overall, however, the combination of indirect and direct elicitation in our study strongly suggests that the popularity of Greeklish among Greek native speakers in the context of DMC is declining. Despite some of these stances having been expressed before, in the current study Greeklish is judged less favorably than Greek on practically all dimensions. The reasons for this probably lie with a combination of factors, from technological innovation (improved support for the Greek script across DMC platforms) and demographic factors (the expansion of Greek DMC users beyond an original core of specialized users) to ideological factors, which are live indicators of financial and political shifts over the past twenty years. The precise identification of these factors remains a topic for future research.

References

- Androutsopoulos, Jannis. 1998. Ορθογραφική ποικιλότητα στο ελληνικό ηλεκτρονικό ταχυδρομείο: μια πρώτη προσέγγιση [Orthographic variation in Greek e-mails: a first approach]. *ΓΛΩΣΣΑ* 46: 49–67.
- Androutsopoulos, Jannis. 2000. Λατινοελληνική ορθογραφία στο ηλεκτρονικό ταχυδρομείο: χρήση και στάσεις [Latin-Greek orthography in electronic mails: Use and stances]. *Studies in Greek linguistics* 20: 75–86.
- Androutsopoulos, Jannis & Volker Hinnenkamp. 2001. Code-Switching in der bilingualen Chat-Kommunikation: ein explorativer Blick auf #hellas und #turks. *Chat-*

- Kommunikation: Sprache, Interaktion, Sozialität und Identität in synchroner computervermittelter Kommunikation*, ed. by Michael Beißwenger, 367–401. Stuttgart: Ibidem.
- Androutsopoulos, Jannis. 2006. Introduction: Sociolinguistics and computer-mediated communication. *Journal of Sociolinguistics* 10: 419–438.
- Androutsopoulos, Jannis. 2009. 'Greeklish': Transliteration practice and discourse in a setting of computer-mediated digraphia. *Standard Languages and Language Standards: Greek, Past and Present* (=Publications of the Centre for Hellenic Studies, King's College London 12), ed. by Alexandra Georgakopoulou, and Michael Silk, 221–249. Farnham: Ashgate.
- Aytac, Selenay. 2014. The Karamanlidika Digital Library Project: Connecting Karamanlides Memories. *Computer Science* 51: 1–4.
- Biernacki, Patrick & Dan Waldorf. 1981. Snowball sampling: Problems and techniques of Chain Referral Sampling. *Sociological Methods and Research* 10: 141–163.
- Björnsson, Jan Arild. 2010. *Egyptian Romanized Arabic: A study of selected features from communication among Egyptian youth on Facebook*. Master's thesis, University of Oslo.
- Chalamandaris, Aimilios, Athanassios Protopapas, Pirros Tsiakoulis, & Spyros Raptis. 2006. All Greek to me! An automatic Greeklish to Greek transliteration system. *5th International Conference on Language Resources and Evaluation*, 1226–1229.
- Coulmas, Florian. 1989. *The writing systems of the world*. Oxford: Basil Blackwell.
- Coulmas, Florian. 2003. *Writing systems: An introduction to their linguistic analysis*. Cambridge: Cambridge University Press.
- Danet, Brenda & Susan C. Herring. 2007. *The multilingual internet: Language, culture, and communication online*. New York: Oxford University Press.
- Dimitropoulou, Maria, Jon-Andoni Duñabeitia, & Manuel Carreiras. 2011. Transliteration and transcription effects in biscriptal readers: The case of Greeklish. *Psychonomic Bulletin & Review* 18: 729–735.
- Garrett, Peter. 2010. *Attitudes to language*. Cambridge: Cambridge University Press.
- Georgakopoulou, Alexandra. 1997. Self-presentation and interactional alliances in e-mail discourse: The style- and code-switches of Greek messages. *International Journal of Applied Linguistics* 7: 141–164.
- Goutsos, Dionysis. 2005. The Interaction of generic structure and interpersonal relations in two-party e-chat discourse. *Language@Internet* 2 (<https://www.languageatinternet.org/articles/2005/188>).
- Herring, Susan C. 2008. Foreword. *Handbook of research on Computer-Mediated Communication*, ed. by Sigrid Kelsey, and Kirk St. Amant, xxxv–xxxvi. Hershey/London: Information Science Reference.
- John, Nicholas A. 2013. The construction of the multilingual internet: Unicode, Hebrew, and globalization. *Journal of Computer-Mediated Communication* 18: 321–338.

- Koutsogiannis, Dimitris & Bessie Mitsikopoulou. 2007. Greeklish and Greekness: Trends and discourses of "Glocalness". *The multilingual internet: Language, culture, and communication online*, ed. by Brenda Danet & Susan C. Herring, 142–160. New York: Oxford University Press.
- Koutsogiannis, Dimitris. 2012. Λατινοελληνικά και Παγκοσμιοποίηση [Roman-Greek and globalization]. *Selected Papers of the 10th International Conference on Greek Linguistics*, ed. by Zoe Gavrilidou, Angeliki Efthymiou, Evangelia Thomadaki, & Penelope Kambakis-Vougiouklis, 881–889. Greece. Komotini: Democritus University of Thrace.
- Koutsogiannis, Dimitris. 2015. Translocalization in digital writing, orders of literacy and schooled literacy. *Critical perspectives on technology and education*, ed. by Scott Bulfin, Nicola F. Johnson, & Chris Bigum, 183–201. New York: Palgrave Macmillan.
- Laghos, Andrew, Sophia Masoura, A. & Athina Skordi. 2012. Linguistics in social networks. *American International Journal of Contemporary Research* 2: 1–5.
- Lambert, Wallace E., Richard C. Hodgson, Robert C. Gardner, & Samuel Fillenbaum. 1960. Evaluational reactions to spoken languages. *The Journal of Abnormal and Social Psychology* 60: 44–51.
- Lambert, Wallace E., Moshe Anisfeld, & Grace Yeni-Komshian. 1965. Evaluation reactions of Jewish and Arab adolescents to dialect and language variations. *Journal of Personality and Social Psychology* 2: 84–90.
- Lambert, Wallace E. 1967. A social psychology of bilingualism. *Journal of Social Issues* 23: 91–109.
- Lee, Carmen K.M. 2007. Linguistic features of email and ICQ instant messaging in Hong Kong. *Multilingual internet: Language, culture, and communication online*, ed. by Brenda Danet & Susan C. Herring, 184–208. New York: Oxford University Press.
- Lees, Christopher, Periklis Politis, & Dimitris Koutsogiannis. 2017. Roman-alphabetized Greek and transliteration in the digital language practices of Greek secondary school pupils on Facebook. *Journal of Greek Media & Culture* 3: 53–71.
- Mironovschi, Lilia. 2007. Russian SMS compliments. *Written Language & Literacy* 10: 53–63.
- Moustaka, Theodora, Paraskevi Pavlitsa, Konstantina Dangouli, and Tharrenos Bratitsis. 2010. Η ελληνική γλώσσα στην εποχή της κοινωνίας της πληροφορίας. Επίδραση της χρήσης των Greeklish stin orthografiki ikanotita ton mathiton. *Πρακτικά Πανελληνίου Συνεδρίου: Η Διδασκαλία της Ελληνικής Γλώσσας (ως πρώτης/μητρικής, δεύτερης/ξένης)*, ed. By Kostas Dinas, Anna Chatzipanagiotidi, Anna Vakali, Triantafyllos Kotopoulos, & Anastasia Stamou, 1–16. ΝΥΜΦΑΙΟ ΦΛΩΠΙΝΑΣ, 4, 5 και 6 Σεπτεμβρίου 2009: Παιδαγωγικό Τμήμα Νηπιαγωγών, Πανεπιστήμιο Δυτικής Μακεδονίας. (Retrieved from: <http://linguistics.nured.uowm.gr/Nimfeo2009/praktika/files/down/savvato2/aithu3a3/moustaka.pdf>.)
- Palfreyman, David, & Muhamed al Khalil, M. 2007. "A Funky Language for Teenzz to

- Use”: Representing Gulf Arabic in Instant Messaging. *The multilingual internet: Language, culture, and communication online*, ed. by Brenda Danet & Susan C. Herring, 43–63. New York: Oxford University Press.
- Shakeel, Muhammad Haroon, Asim Karim, & Imdadullah Khan. 2019. A multi-cascaded deep model for bilingual SMS classification. *Neural Information Processing: 26th International Conference, ICONIP 2019*, ed. by Tom Gedeon, Kok Wai Wong, & Minhoo Lee, 287–298. Switzerland: Springer Nature.
- Sophocleous, Andry & Christiana Themistocleous. 2014. Projecting social and discursive identities through code-switching on Facebook: The case of Greek Cypriots. *Language@Internet* 11 (<https://www.languageatinternet.org/articles/2014/sophocleous>).
- Spilioti, Thiresia. 2007. *Text-messages and social interaction: genre, norms, and sociability in Greek SMS*. Doctoral dissertation, King’s College London.
- Spitzmüller, Jürgen. 2012. Floating ideologies: Metamorphoses of graphic “Germanness”. *Orthography as social action: Scripts, spelling, identity and power*, ed. by Alexandra Jaffe, Jannis Androutsopoulos, Mark Sebba, & Sally Johnson, 255–288. Berlin: De Gruyter Mouton.
- Themistocleous, Christiana. 2009. Written Cypriot Greek in online chat: Usage and attitudes. *Proceedings of the 8th International Conference on Greek Linguistics*, ed. by Georgios Giannakis, Mary Baltazani, Ioannis Xydopoulos, & Anastasios Tsangalidis, 473–488. Ioannina: University of Ioannina.
- Themistocleous, Christiana 2010. Writing in a non-standard Greek variety: Romanized Cypriot Greek in online chat. *Writing Systems Research* 2: 155–168.
- Themistocleous, Christiana. 2013. Digital code-switching between Cypriot and Standard Greek: Performance and identity play online. *International Journal of Bilingualism* 19: 282–297.
- Tseliga, Theodora. 2002. Some cultural and linguistic implications of computer-mediated Greeklish. Paper presented at Net/Work/Theory: The 3rd International Conference of the Association of Internet Researchers, Maastricht, Netherlands, October.
- Tseliga, Theodora. 2003. *Computer-mediated Greeklish: Key linguistic and sociocultural issues*. Doctoral dissertation, University of Brighton, UK.
- Tseliga, Theodora. 2007. “It’s all Greeklish to me!”: Linguistic and sociocultural perspectives on Roman-alphabetized Greek in asynchronous Computer-Mediated Communication. *The multilingual internet: Language, culture, and communication online*, ed. by Brenda Danet & Susan C. Herring, 116–141. New York: Oxford University Press.
- Warschauer, Mark, Ghada R. El Said, & Ayman G. Zohry. 2007. Language choice online: Globalization and identity in Egypt. *The multilingual internet: Language, culture, and communication online*, ed. by Brenda Danet & Susan C. Herring, 303–318. New York: Oxford University Press.

- Wellisch, Hans H. 1975. *Transcription and transliteration: An annotated bibliography on conversion of scripts*. Silver Spring, MD: Institute of Modern Languages.
- Xydopoulos, George J., Kyriakoula Tzortzatou, & Argiris Archakis. 2019. The perception of Greek national orthography and Greeklish at the threshold of the Post-Modern era: Investigating attitudes towards orthography in Greek education. *Journal of Modern Greek Studies* 37: 397–424.
- Zahn, Christopher J. & Robert Hopper. 1985. Measuring language attitudes: The speech evaluation instrument. *Journal of Language and Social Psychology* 4: 113–123.

Appendix A: Matched guise task stimuli

☆ 9 December 2018 at 21:06

Re:
To: Άννα

Άννα,
γεια σου! Το Δουβλίνο είναι μικρό επομένως έχεις μέρες να το απολαύσεις απ' άκρη σ' άκρη όσο είσαι εκεί. Εγώ πήγα στους κοντινούς προορισμούς γιατί δεν μπορούσα οικονομικά δυστυχώς να στηρίξω άλλα ταξίδια, αν και θα το ήθελα!

Καληνύχτα!

FIGURE A.1A Email 1: Greek guise

☆ 9 December 2018 at 21:06

Re:
To: Άννα

Anna,
gia su! To Duvlino ine mikro epomenos chis meres na to apolafsis ap' akri s' akri oso ise eki. Ego piga stus kontinus proorisumus giati den borusa ikonomika distihos na stirikso alla taksidia, an ke tha to ithela!

Kalinihta!

FIGURE A.1B Email 1: Greeklish-Ph guise

☆ 9 December 2018 at 21:06

Re:
To: Άννα

Anna,
geia sou! To Doublino einai mikro epomenws exeis meres na to apolayseis ap' akrh s' akrh oso eisai ekei. Egw phga stous kontinous proorisumus giati den mporousa oikonomika dystyxws na sthriksw alla taksidia, an kai tha to hthela!

Kalhnxyta!

FIGURE A.1C Email 1: Greeklish-O guise

☆ 9 December 2018 at 21:06

Re:
To: Anna

Anna,
hi! Dublin is so small that you've got plenty of days to enjoy it while you're there. Unfortunately, I only visited the places nearby because I couldn't afford any more trips, even though I would love to!

Goodnight!

FIGURE A.1D Email 1: English translation (not seen by the participants)

☆ 21 October 2018 at 12:54
 Re: :
 To: Μαρία

🗑️ ↶ ↷ ➡

Γεια σου Μαρία,

Μένω σε μια περιοχή εκτός της πόλης. Δυσκολεύτηκα να βρω σπίτι. Ήρθα με τρένο. Είναι 2 ώρες, τα λεωφορεία 4, αλλά πιο οικονομικά. Έχεις πολύ καιρό! Να έχεις στο νου σου ότι είναι μια κρύα πόλη!

Φιλικά,

FIGURE A.2A Email 2: Greek guise

☆ 21 October 2018 at 12:54
 Re: :
 To: Μαρία

🗑️ ↶ ↷ ➡

Gia su Maria,

Meno se mia periohi ekto tis polis. Diskoleftika na vro spiti. Irtha me treno. Ine 2 ores, ta leoforia 4, alla pio ikonomika. Ehis poli kero! Na ehis sto nu su oti ine mia kria poli!

Filika,

FIGURE A.2B Email 2: Greeklish-Ph guise

☆ 21 October 2018 at 12:54
 Re: :
 To: Μαρία

🗑️ ↶ ↷ ➡

Geia sou Maria,

Menw se mia perioxh ekto ths polhs. Dyskoleythka na brw spiti. Hrtha me treno. Einai 2 wres, ta lewforeia 4, alla pio oikonomika. Exeis poly kairo! Na exeis sto nou sou oti einai mia krya polh!

Filika,

FIGURE A.2C Email 2: Greeklish-O guise

☆ 21 October 2018 at 12:54
 Re: :
 To: Μαρία

🗑️ ↶ ↷ ➡

Hello Maria,

I live outside of town. It was hard for me to find a house. I came by train. It takes 2 hours by train and 4 hours by bus but it's cheaper. You've got plenty of time! Keep in mind that it's a cold city!

Best,

FIGURE A.2D Email 2: English translation (not seen by the participants)

☆

28 April 2018 at 16:13

Re:

To:

Καλησπέρα!

Η πόλη είναι όμορφη. Δεν υπάρχει τεράστια ποικιλία σε διασκέδαση ή ψυχαγωγία. Μπορεί να είναι κάπως ακριβό να φας σε ένα εστιατόριο, αλλά το κόστος δεν είναι τόσο αντιπροσωπευτικό για Γαλλία... Εσύ τότε φεύγεις από δω;

Χαιρετισμούς,

FIGURE A.3A Email 3: Greek guise

☆

28 April 2018 at 16:13

Re:

To:

Kalispera!

I poli ine omorfi. Den iparhi terastia pikilia se diaskedasi i psihagogia. Bori na ine kapos akrivo na fas se ena estiatorio, alla to kostos den ine toso antiprosopeftiko gia Gallia...Esi pote fevgis apo do?

Heretismus,

FIGURE A.3B Email 3: Greeklish-Ph guise

☆

28 April 2018 at 16:13

Re:

To:

Kalhspira!

H polh einai omorfh. Den yparxei terastia poikilia se diaskedash h psyxagwgia. Mporei na einai kapws akrivo na fas se ena estiatorio, alla to kostos den einai toso antiprosweptiko gia Gallia.... Esy pote feygeis apo dw?

Xairetismus,

FIGURE A.3C Email 3: Greeklish-O guise

☆

28 April 2018 at 16:13

Re:

To:

Good evening!

The city is pretty. There is not much to do when it comes to having fun. It might be a bit expensive to eat at a restaurant but the cost is not very representative of France...When are you leaving?

Regards,

FIGURE A.3D Email 3: English translation (not seen by the participants)

FIGURE A.4A
SMS message 1: Greek guise

FIGURE A.4B
SMS message 1: Greeklish-Ph guise

FIGURE A.4C
SMS message 1: Greeklish-O guise

FIGURE A.4D
SMS message 1: English translation (not seen
by the participants)

Πέμ, 6 Ιουν, 6:23 μμ

Εμείς ξυπνήσαμε!
Παιδί μου περάστε από το σπίτι
έτσι κι αλλιώς το χωριό είναι
πριν τη Χαλκίδα
Η Ντίνα κι ο Νίκος μου λένε
να περάσετε! Δεν υπάρχει
πρόβλημα! Άλλωστε είναι
στο δρόμο σας!
Τρως μπιφτέκια με πατάτες;

FIGURE A.5A
SMS message 2: Greek guise

Πέμ, 6 Ιουν, 6:23 μμ

Εμείς ξυπνήσαμε!
Παιδί μου περάστε από το σπίτι
έτσι κι αλλιώς το χωριό είναι
πριν τη Χαλκίδα
Η Ντίνα κι ο Νίκος μου λένε
να περάσετε! Δεν υπάρχει
πρόβλημα! Άλλωστε είναι
στο δρόμο σας!
Τρως μπιφτέκια με πατάτες;

FIGURE A.5A
SMS message 2: Greeklish-Ph guise

Πέμ, 6 Ιουν, 6:23 μμ

Εμείς ξυπνήσαμε!
Παιδί μου περάστε από το σπίτι
έτσι κι αλλιώς το χωριό είναι
πριν τη Χαλκίδα
Η Ντίνα κι ο Νίκος μου λένε
να περάσετε! Δεν υπάρχει
πρόβλημα! Άλλωστε είναι
στο δρόμο σας!
Τρως μπιφτέκια με πατάτες;

FIGURE A.5A
SMS message 2: Greeklish-O guise

Πέμ, 6 Ιουν, 6:23 μμ

Εμείς ξυπνήσαμε!
Παιδί μου περάστε από το σπίτι
έτσι κι αλλιώς το χωριό είναι
πριν τη Χαλκίδα
Η Ντίνα κι ο Νίκος μου λένε
να περάσετε! Δεν υπάρχει
πρόβλημα! Άλλωστε είναι
στο δρόμο σας!
Τρως μπιφτέκια με πατάτες;

FIGURE A.5A
SMS message 2: English translation (not
seen by the participants)

9 Ιαν 2019, 11:38 πμ

Καλημέρα Σοφία!!! Εγώ είμαι
χωριό πάω ταχυδρομείο
άργησα αρκετά και πήγα κ πήρα
ένα καφέ
αν δε βαριέσαι κ μπορείς να
πάμε να πιούμε ένα πρωινό χυμό
στείλε μου

FIGURE A.6A
SMS message 3: Greek guise

9 Ιαν 2019, 11:38 πμ

Kalimera Sofia!!! Ego ime
horio pao tahidromio
argisa arketa ke piga k pira
ena kafe
an de variese k boris na
pame na piume ena proino himo
stile mu

FIGURE A.6B
SMS message 3: Greeklish-Ph guise

9 Ιαν 2019, 11:38 πμ

Kalhmera Sofia!!! Egw eimai
xwrio paw taxydromeio
arghsa arketa kai phga k phra
ena kafe
an de bariesai k mporeis na
pame na pioume ena prwino xymo
steile mou

FIGURE A.6C
SMS message 3: Greeklish-O guise

9 Ιαν 2019, 11:38 πμ

Good morning Sophie!!! I'm in
town I'm heading to the post office
I was late and went to grab
a coffee
if you're not bored and you're free
let's go and have a juice
text me

FIGURE A.6D
SMS message 3: English translation (not
seen by the participants)

Appendix B: Demographic and attitudes questionnaire

1. I am:
male female
2. Age:
18–25 26–35 36–50 >50
3. Level of education:
High school Undergraduate studies Postgraduate studies University
4. Occupation:
5. Have you lived abroad?
Yes No
6. For how many years?
7. In which country/countries?
8. Do you use email as a means of communication?
Yes No
9. How many years have you been using it?
10. How often do you communicate through email?
Every day 2–3 times per week Rarely
11. You usually send emails to (you may choose more than one option):
Family Friends Colleagues Teachers Other
12. When you write an email you mostly use:
Greek characters Roman characters Both
13. If there is a certain reason for using Greek, Roman or both characters please specify it:
14. Do you use text-messaging (SMS) as a means of communication?
Yes No
15. How many years have you been using it?
16. How often do you communicate through SMS messages?
Every day 2–3 times per week Rarely
17. You usually send SMS messages to (you may choose more than one option):
Family Friends Colleagues Teachers Other
18. When you write an SMS message you mostly use:
Greek characters Roman characters Both
19. If there is a certain reason for using Greek, Roman or both characters please specify it:
20. Did you find something weird or repulsive in the messages above? Click here to have a look at the messages again.

Appendix C: Statistical analysis

To determine whether the unequal demographic distribution of our pool of participants (tables 3–5) affected their responses, we used the Kruskal Wallis test, which is a non-parametric test that can be used to compare two or more independent samples of equal or different sample sizes. In total, three tests were performed on each set of responses, and the alpha level of significance was set to 0,016 to reflect that (Bonferroni correction for multiple tests). At this alpha level, participant responses for the 8 adjectives across groups were not significantly different. Only in one case, judgements for “cultivated” for emails in Greeklish-Ph, were participant group judgements significantly different ($H = 11,441$ $p = 0,010$), and this concerned the age of participants (Table C.2). However, as this difference concerns only emails and not SMS, and only one of the three transliteration patterns investigated, no solid conclusions regarding attitudes to Greeklish can be drawn from it. Further research is warranted to study the importance of age in these judgements.

TABLE C.1 Difference between the medians of the participants by gender; i) men and ii) women

	Greek		Greeklish-O		Greeklish-Ph	
	Email	SMS	Email	SMS	Email	SMS
cultivated	$H = 0,025$ $p = 0,875$	$H = 0,003$ $p = 0,956$	$H = 0,001$ $p = 0,978$	$H = 0,506$ $p = 0,477$	$H = 0,137$ $p = 0,712$	$H = 0,014$ $p = 0,904$
arrogant	$H = 0,268$ $p = 0,605$	$H = 0,480$ $p = 0,488$	$H = 0,137$ $p = 0,712$	$H = 0,038$ $p = 0,846$	$H = 0,025$ $p = 0,875$	$H = 0,082$ $p = 0,775$
hasty	$H = 0,004$ $p = 0,948$	$H = 0,004$ $p = 0,948$	$H = 3,412$ $p = 0,065$	$H = 0,372$ $p = 0,542$	$H = 0,099$ $p = 0,753$	$H = 1,870$ $p = 0,171$
outgoing	$H = 0,771$ $p = 0,380$	$H = 0,012$ $p = 0,912$	$H = 0,372$ $p = 0,542$	$H = 1,033$ $p = 0,309$	$H = 0,372$ $p = 0,542$	$H = 0,099$ $p = 0,753$
conservative	$H = 0,017$ $p = 0,897$	$H = 1,189$ $p = 0,276$	$H = 0,588$ $p = 0,443$	$H = 0,087$ $p = 0,767$	$H = 0,602$ $p = 0,438$	$H = 0,031$ $p = 0,861$
lazy	$H = 0,837$ $p = 0,360$	$H = 0,025$ $p = 0,875$	$H = 0,049$ $p = 0,824$	$H = 1,071$ $p = 0,301$	$H = 0,165$ $p = 0,684$	$H = 0,231$ $p = 0,631$
likeable	$H = 0,189$ $p = 0,664$	$H = 1,356$ $p = 0,244$	$H = 0,000$ $p = 0,985$	$H = 0,038$ $p = 0,846$	$H = 0,012$ $p = 0,912$	$H = 0,418$ $p = 0,518$
curt	$H = 0,617$ $p = 0,432$	$H = 0,005$ $p = 0,941$	$H = 0,213$ $p = 0,644$	$H = 0,165$ $p = 0,684$	$H = 0,082$ $p = 0,775$	$H = 0,173$ $p = 0,678$

TABLE C.2 Difference between the medians of the participants by age; i) 18–25, ii) 26–35, iii) 36–50 and iv) >50

	Greek		Greeklish-O		Greeklish-Ph	
	Email	SMS	Email	SMS	Email	SMS
cultivated	H = 9,861 p = 0,020	H = 2,942 p = 0,401	H = 1,004 p = 0,800	H = 2,531 p = 0,470	H = 11,441 p = 0,010	H = 2,452 p = 0,484
arrogant	H = 0,345 p = 0,951	H = 2,295 p = 0,513	H = 0,652 p = 0,884	H = 0,128 p = 0,988	H = 0,629 p = 0,890	H = 2,244 p = 0,523
hasty	H = 3,647 p = 0,302	H = 0,167 p = 0,983	H = 0,905 p = 0,824	H = 2,744 p = 0,433	H = 2,050 p = 0,562	H = 3,725 p = 0,293
outgoing	H = 1,489 p = 0,685	H = 1,600 p = 0,659	H = 6,785 p = 0,079	H = 0,714 p = 0,870	H = 3,035 p = 0,386	H = 4,871 p = 0,182
conservative	H = 0,572 p = 0,903	H = 0,319 p = 0,956	H = 2,891 p = 0,409	H = 1,472 p = 0,689	H = 0,551 p = 0,907	H = 5,213 p = 0,157
lazy	H = 1,844 p = 0,605	H = 1,008 p = 0,799	H = 0,334 p = 0,953	H = 1,211 p = 0,750	H = 3,078 p = 0,380	H = 5,518 p = 0,138
likeable	H = 0,753 p = 0,861	H = 2,373 p = 0,499	H = 3,161 p = 0,368	H = 2,472 p = 0,480	H = 3,456 p = 0,327	H = 0,180 p = 0,981
curt	H = 0,598 p = 0,897	H = 2,167 p = 0,538	H = 1,235 p = 0,745	H = 1,008 p = 0,799	H = 0,117 p = 0,990	H = 2,377 p = 0,498

TABLE C.3 Difference between the medians of the participants by their level of education; i) Secondary education, ii) Undergraduate and iii) Postgraduate studies

	Greek		Greeklish-O		Greeklish-Ph	
	Email	SMS	Email	SMS	Email	SMS
cultivated	H = 0,648 p = 0,723	H = 5,305 p = 0,070	H = 0,652 p = 0,722	H = 1,780 p = 0,411	H = 0,950 p = 0,622	H = 1,094 p = 0,579
arrogant	H = 1,621 p = 0,445	H = 0,246 p = 0,884	H = 0,077 p = 0,962	H = 0,416 p = 0,812	H = 0,562 p = 0,755	H = 1,817 p = 0,403
hasty	H = 0,336 p = 0,845	H = 2,498 p = 0,287	H = 0,361 p = 0,835	H = 7,042 p = 0,030	H = 1,724 p = 0,422	H = 0,116 p = 0,944
outgoing	H = 1,723 p = 0,423	H = 0,364 p = 0,834	H = 4,001 p = 0,135	H = 2,374 p = 0,305	H = 1,375 p = 0,503	H = 1,052 p = 0,591
conservative	H = 1,116 p = 0,572	H = 1,098 p = 0,577	H = 0,568 p = 0,753	H = 0,790 p = 0,674	H = 2,154 p = 0,341	H = 0,099 p = 0,952
lazy	H = 0,033 p = 0,984	H = 2,532 p = 0,282	H = 1,093 p = 0,579	H = 1,103 p = 0,576	H = 1,358 p = 0,507	H = 1,193 p = 0,551
likeable	H = 1,505 p = 0,471	H = 1,178 p = 0,555	H = 1,621 p = 0,445	H = 4,116 p = 0,128	H = 0,273 p = 0,872	H = 3,502 p = 0,174
curt	H = 1,443 p = 0,486	H = 0,834 p = 0,659	H = 0,594 p = 0,743	H = 1,386 p = 0,500	H = 0,818 p = 0,664	H = 0,154 p = 0,926