

TEACHING SOUND SYMBOLISM THROUGH JAPANESE POP CULTURE. A RESPONSE TO KAWAHARA (2018)

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1. INTRODUCTION. THE CALL FOR QUANTITATIVE APPROACHES TO TEACHING LINGUISTICS RESEARCH

In recent times, the Scholarship of Teaching and Learning (SoTL) has become a prominent interdisciplinary field of research. The body of academic reflections on the effectiveness and the implications of specific teaching techniques sensibly has grown as a consequence of widespread socio-economic factors, such as the formation of culturally diverse learning environments, the development of new teaching technologies and external financial pressures on the institutions, which have led to the request for assessment data. Moreover, the growing attention on learning and the brain has provided fertile grounds for SoTL (e.g., McKinney, 2004).

In 2018, the Linguistic Society of America tackled these issues by organizing a dedicated minicourse at its annual meeting (McCarvel, Bakos, Bungler, Clements, Eggington, Launspach, Temkin Martinez, Motut, Rushforth, 2018) and revamping the related subsection of *Language* (Hiramatsu, 2019). The new article type, *Innovations in Teaching Linguistics*, aims at presenting novel pedagogical techniques through the publication of didactic experiences and materials. SoTL is far from being a field which is exclusively grounded on positivist beliefs: the extreme diversity of the backgrounds of SoTL researchers, the nature itself of the inquired phenomena, and the absence of a unifying disciplinary paradigm justify the assumption of a mixed-methodological mindset (Poole, 2013). Yet, many of the linguistic contributions to this line of studies have claimed that more systematic (Mallinson, Charity Hudley, 2018: 210), quantitative (Zuraw, Aly, Lin, Royer, 2019: 418; Filimonova, 2020: 16) approaches are needed in order to evaluate the actual success of the proposed didactic strategies².

The contribution of Laurel Mackenzie (2018) initiated the aforementioned *Language* article type. The author gathered together the sources which she used to organize her undergraduate course in linguistics based on onomastic data. Her first thematic cluster concerns sound symbolism (Mackenzie, 2018: 296-297), which she exploits to introduce her students to the concept of the arbitrariness of language and the difference between vowels and consonants³. Mackenzie's sources include Shigeto Kawahara's line of study

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² Of course, language teaching and applied linguistics can already count on a solid quantitative toolkit to assess the effects of didactic methods. See, e.g., Plonsky (2015).

³ With "sound symbolism" I refer to the line of studies born in the first half of the XX century with Sapir (1929) "mal/mil effect" and Köhler (1929) "maluma/takete effect". These researchers postulated strong

on sound symbolic aspects of Japanese pop culture. In actual fact, Kawahara's research itself was conceived with didactic purposes. His teaching experience was reviewed in a retrospective article (Kawahara, 2018) which, similarly to what we saw in Western studies, concludes with an admission of the absence of quantitative evidence backing the effectiveness of his program⁴.

In this article, I provide a quantification of the didactic performance of Kawahara's method. Grauerholz and Main (2013: 157-159) rightly pointed out that, in SoTL research, results are difficult to generalize: indeed, teaching and learning are profoundly context-dependent activities. As the reader will notice, this aspect of SoTL is exacerbated in the experiment presented here, in which the tenets of a university course were explained to a single high-school class during a brief, two-lesson language awareness program (e.g., Wolfram, 1993; for the teaching of linguistics in high school, e.g., Bateman, Hudgens Henderson, 2021). Nevertheless, this paper will seek to encourage quantitative experimentation in broader contexts of linguistics teaching by presenting a compact testing procedure. Chapter 2 will sketch a history of Kawahara's research on sound symbolism related to his teaching program. Chapter 3 will describe the teaching context and the preliminary profiling procedures. Lastly, Chapter 4 will outline the teaching experiment, Chapter 5 will discuss the results, and Chapter 6 will draw the conclusions.

2. TEACHING PHONETICS THROUGH SOUND SYMBOLISM. FROM ITS ORIGINS TO ITS "EVOLUTIONS"

In 2013, Kawahara (2013a; Shinohara, Kawahara, 2013) published the results of his project on the phonetics of maid café employees' voices and names. Maid cafés are Japanese bars which became popular at the beginning of the XXI century through widespread pop culture references (e.g., comics, animation). The female employees wear cute maid outfits and serve the clientele in a very stereotypical manner. This persona formation phenomenon also involves linguistic aspects: maids have a very distinctive way of speaking, and phonetic regularities can be found in their aliases. For this reason, Kawahara focused on phonetic cues of voice attractiveness and indexical values concerning cuteness. Indeed, when compared to the employees' natural utterances, their maid voices had higher F0 in H targets, greater F0 dynamism and lower [a]s. Moreover, when asked to associate aliases with two types of maid character (i.e., *moe*, an accessible, soft girl, and *tsundere*, an introvert, blunt girl), the participants manifested clear patterns of preference. Following sound-symbolic associations, *moe* maids were named with aliases containing sonorants, while plosives were associated with the blunt type. Kawahara presented these results in an invited lecture at the Tokyo International Christian University, where he had previously obtained his bachelor's degree. The scholar was overwhelmed with the extremely positive reception: as a consequence of his lecture, a phonetics study group was created by the students of that institution (Kawahara, 2013a). This is when Kawahara presumably realized the didactic potential of exploring the phonetics of the Japanese pop world. A first attempt in this direction was readily prepared for a volume on maid culture (Kawahara, 2013b), presenting a summary of his studies.

associations between specific sounds and referential features (e.g., roundness, smallness etc.), challenging the arbitrariness of the sign thesis (Saussure, 1916). Among the impressive number of follow-ups, replications and explanatory attempts, the reader can refer to Ohala (1984) and Ramachandran, Hubbard (2001) for some key concepts. See also Nobile, Lombardi Vallauri (2016).

⁴ See Kawahara, Monou (2019) for student questionnaire data. However, the authors do not compare their results with data on other courses, so that they should be taken as provisional.

Two years later, the author wrote an introduction to phonetics for a popular Japanese science series (Kawahara, 2015). An explanation of sound symbolism was placed in the very first chapters as a gateway to catch the readers' attention and sugarcoat more technical concepts. The book was well received, prompting Kawahara to pursue his didactic intents by investigating sound symbolism in captivating aspects of Japanese pop culture (see Kawahara, Monou, 2018). A follow-up to the research on the phonetics of maids' voice (Kawahara, 2016) was published the following year. The prosodic analysis of Kawahara (2013a) was replicated with the addition of a bipartition between *moe* (with higher voice) and *tsundere* (with lower voice) realizations. The pedagogical nature of this effort is made even more explicit by the publication of supplementary acoustic materials from the inquiry, for «those who are interested in using the voices [...] for their teaching» (Kawahara, 2016: 109). Shortly after this contribution, Kawahara's perspectives on the teaching of linguistics received a huge popularity boost. At the very end of the year, Kawahara, Noto, Kumagai (2016) published online a pre-print of an article focused on sound symbolic aspects in Japanese Pokémon names⁵. Pokémon is one of the biggest media franchises in the world⁶. It originated from an influential videogame series published by Nintendo in 1996, in which the player is given the task of catching fantasy creatures and making them battle against opponents. The corpus of Pokémon names is ideal for quantitative analyses: in fact, all the 905 characters (as of July 2022) have official numeric values describing their characteristics (speed, evolution level, size etc.). The authors tested to check whether Pokémon size, evolution level, and strength could be predicted through the number of voiced plosives and moras in the creatures' names. On the one hand, the positive results confirmed Ohala's (1984) frequency code hypothesis, which posits that low-frequency sounds (such as voiced plosives) evoke the concept of bigness; on the other, they paved the way for further analyses on the sound-symbolic values of mora counts. The authors stressed (Kawahara *et al.*: 2016: 2) that one of the main reasons behind their interest in Pokémon names lay in the search for catchy topics to use in introductory classes in linguistics, phonetics, and psychology.

The article came out two years later in the pages of *Phonetica* with a substantial addition of analyses on vowel quality (Kawahara, Noto, Kumagai, 2018). This did not hinder its growing popularity. A follow-up based on a forced-choice mal/mil test (Sapir, 1929) concerning pseudo-Pokémon evolution levels was published in Japanese (Kumagai, Kawahara, 2017a). Moreover, Kawahara (2017a) was asked to write an informal recount of his research for the Japanese spin-off of the world-renowned magazine *Wired*. At the international level, there are traces of early adoption of Kawahara and colleagues' preprint as teaching material (Berent, 2017). Over the course of 2017, Kawahara continued to publish Japanese studies on sound symbolism concerning exotic topics (bilabials in the brand names of child diapers – cf. Jakobson, 1941; Kumagai, Kawahara, 2017b; phonetic composition of the Ultraman characters' names, with monsters showing greater quantities of voiced plosives: Kawahara, Monou, 2017; voiced plosives and mora counts in the names of Dragon Quest spell levels: Kawahara, 2017b). All these materials were collected by the author with clear didactic intents and were subsequently gathered together in an introduction to phonetics textbook (Kawahara, 2017c), which is the realization of the project that started with Kawahara (2015).

In 2018, various events promoted Kawahara's method at the international level. First, as was mentioned above, the original Pokémon study was published in a non-Japanese journal (Kawahara *et al.*, 2018). Almost contemporarily, a follow-up concerning a forced-

⁵ The actual idea of analyzing the Pokémon corpus came from a proposal by the third author, Kumagai, during an intensive phonetics seminar at the Tokyo Metropolitan University (Kawahara, 2018: 23). For a historical recount on this line of research, see Kawahara (2021).

⁶ See https://en.wikipedia.org/wiki/List_of_highest-grossing_media_franchises.

choice naming task administered to Japanese children was prepared (Kawahara, Isobe, Kobayashi, Monou, Okabe, 2018). Children were asked to name fictional Pokémon characters selecting one of two possible nonwords. The effects of voiced plosives and vowel quality on the naming of creatures with different evolution levels were evaluated against two conceptualizations of familiarity with the Pokémon franchise. Children produced the expected patterns, independently of their Pokémon proficiency. Note that, at this point, this line of studies began to drift away from the purely didactic purposes: the authors endorsed (*ibid.*: 127) the use of Pokémon materials in acquisition experiments as a way of making children's participation an enjoyable activity. In the same vein, the first Pokémon study authored by American university researchers (Shih, Ackerman, Hermalin, Inkelas, Kavitskaya, 2018) selected the corpus of names from this specific franchise in order to provide insights on cross-cultural differences in sound-symbolic associations. Since Pokémon names are variably localized in different languages, English names were expected to follow similar, but not coincident, sound-symbolic associations. Indeed, while the effect directionalities were overall coherent with Kawahara *et al.* (2018), language-specific subtleties were also retrieved, such as the substitution of mora with segment counts to express size. Shih *et al.* (2018) coined the terms “Pokémonastics” (referring to the line of studies) and “Pokémoniker” (referring to the Pokémon names). Their cross-linguistic, comparative intents were reflected in the First Conference on Pokémonastics, which was organized by Kawahara and colleagues and took place at the Keio University in May 2018. The conference brought together an international group of researchers to discuss sound-symbolic issues using the Pokémon dataset, without any reference to the teaching of linguistics⁷.

Since then, Pokémonastics has rapidly grown as a standalone field of analysis, whose teaching-unrelated scopes can be mentioned only briefly here (e.g., application of the Maximum Entropy model to sound symbolism: Kawahara, Katsuda, Kumagai, 2019; semantics of sound-symbolic associations: Kawahara, Kumagai, 2019a; Kawahara, Kumagai, 2021; Kawahara, Godoy, Kumagai, 2020; positional effects in sound symbolism: Kawahara, Kumagai, 2019b; sound-symbolic expression of size in Brazilian Portuguese: Godoy, de Souza Filho, de Souza, França, Kawahara, 2020 – and in English: Kawahara, Moore, 2021; sound symbolic choices in the selection of real words to express peculiar concepts: Kawahara, Suzuki, Kumagai, 2020; phonological cumulativity in sound symbolism: Kawahara, Breiss, 2021). From Kawahara's viewpoint, this is by no means a sign of declining interest in his teaching program. Even though the didactic intents of Pokémonastics are no longer always mentioned in the related studies, the webpage containing the supplementary materials of Kawahara (2017c) is constantly updated with the newest acquisitions⁸. Moreover, the scholar continues to expand the range of his pedagogical materials. Studies on a long-running animated series for girls (*PreCure*: e.g., Kawahara, 2019) were carried out in order to investigate female-oriented franchises (Kawahara, 2018: 22) and presumably appeal to the female students. The author attempted a suggestive sound-symbolic personality reconstruction of the female heroines of the show by noting a statistically significant presence of bilabials (for cuteness), rhotics (for transparency), and voiced plosives (for strength). Also, Kawahara inspired many

⁷ The conference had a general phonetics session as well. Unfortunately, conference proceedings were not published; nonetheless, the reader can find all the presentation materials on the dedicated website (<https://1stpokemonastics.wordpress.com/>). A paper collecting the cross-linguistic studies (Japanese, English, Mandarin, Cantonese, Korean and Russian) which were promoted through the conference is currently under review (Shih, Ackerman, Hermalin, Inkelas, Jang, Johnson, Kavitskaya, Kawahara, Oh, Starr, Yu, 2019, submitted).

⁸ <http://user.keio.ac.jp/~kawahara/hitsuji2017.html>.

student projects concerning similar topics⁹, which were subsequently collected and further developed in various publications (e.g., Kawahara, Monou, 2018; Kawahara, 2018; Kawahara *et al.*, 2019; Kumagai, Yoshitake, Tanji, Matsuhashi, 2020). Most importantly, some of these works are mainly concerned with SoTL, including practical guidelines. In particular, Kawahara (2018) is very informative, since it essentially summarizes the application of the “pop” sound-symbolic studies to an introductory phonetics course¹⁰. As the reader may notice from Fig. 1, Kawahara’s lessons do not pretend to explain everything through sound symbolism, nor do they exclusively refer to the sound-symbolic patterns which he discovered over the years. For example, Perfors’ (2004) experiment observing the potential of specific sound patterns for enhancing facial attractiveness in a dating website can be considered part of the “fun stuff” which, in Kawahara’s words, «lower[s] students’ psychological boundary, primarily because the materials used in these analyses are what they are familiar with» (Kawahara, 2018: 25). In a recent overview of the potential intersections between theoretical phonology and the studies on sound symbolism, Kawahara (2020a) concludes that, if anything, the latter succeeds in popularizing linguistics outside the academic milieu. For example, it may give a captivating perspective on the discipline to high schoolers (Kawahara, 2017b: 39). In the next chapter, an attempt in this direction will be presented, precluding to a quantitative analysis of the effectiveness of Kawahara’s method.

3. THE SCHOOL AND ITS INHABITANTS

Writing about a school research project means honoring the hospitality which the researcher received from the institute itself. This act of responsibility should be addressed with transparency, without leaving the researcher him/herself out of the picture, as he/she is a fundamental component of the research narrative (Thomson, Hall, 2016: §8). In this chapter, I propose a short description of the circumstances of this study, introducing the school and its setting. Then, I outline the questionnaire which I administered to the students in order to obtain a quantitative profiling of their academic proficiency.

Towards the end of 2018, I was ready to collect the data for an experiment on the sound-symbolic values of a Florentine sociolinguistic variant, which is peculiarly widespread in the local youth language (Piccardi, 2017a). I came to realize that the involvement of a Florentine senior high school class was the best approach I could hope for in order to run a pilot test. In fact, not only are seniors already projected into the adulthood stage of their social lives (Eckert, 1997; see Pallas, 1993 for a nuanced sociological perspective), which was the focus of my previous inquiries on the variant (Piccardi, 2017b), but they have also reached the age of majority (18 years old in Italy), facilitating the management of consent procedures.

⁹ These mainly include videogame franchises (*Final Fantasy*, *Monster Hunter*, *Yo-kai Watch*), but also groups of female actresses (*Takarazuka*) and singers (*AKB48*), as well as Disney characters.

¹⁰ See also Kawahara (2020b) for course syllabi, focus questions, and learning exercises.

Figure 1: *Flowcharts of the three “case studies” which were reported in Kawahara (2018) in order to exemplify his teaching method*



I asked to the members of the Linguistic Circle of Florence for advice. The Circle organized weekly seminars which were attended also by some high school teachers. The Professor who manages the Circle stepped in and told me that he personally knew the

Principal of a high school in Scandicci (50,284 ab.), a Municipality within the metropolitan area of Florence. The dialect of Scandicci is structurally identical to that of the regional *capoluogo* (e.g., Giannelli, 2000). Nonetheless, the town retains some degree of individual identity, which is marked by central historical landmarks (such as the *Acciaiuolo* “castle” built in the XIV century), humorous songs on the subject of local stereotypes and dynamic town planning projects¹¹. Scandicci was the first Municipality to be connected to Florence through a tramway system in 2010. The Russell-Newton (RN) institute is the town’s main high school. The building complex is of remarkable dimensions (11,000 m²), and the education provided is extremely variegated, comprising five *liceo* and five technical high schools¹². Being near to the town center and connected to Florence through the new tramway, the RN is witnessing an increase in the number of students enrolled which complexifies its ethnic and socio-economic composition. The Principal asked for a cover letter from my University and then introduced me to Prof. S. B., who was willing to oversee my project. In March 2019, I met with the 25 students of the V C class. The V C was part of the *liceo scientifico* program¹³, which usually leads students towards university enrolment, with particular attention to scientific subjects. In this context of pervasive “college” culture (e.g., Holland, Farmer-Hinton, 2009: 26), the V C class exceeded the school standards. Average grades were very high, and each student had clear academic goals, which they meticulously strived for during their high school years. Prof. S. B. wanted to provide her students with a fully-fledged University experience and was very collaborative regarding the time at my disposal. She arranged two school days for my experiment and another two days for a small awareness program on the (sound-symbolic) issues tackled in my test. Given the students’ background, I proposed to Prof. S. B. the idea of testing University-level teaching methods during the awareness program. After reviewing my intents, she gladly accepted. During the two “experimental” school days, I administered a questionnaire to the students, with two main purposes: a) to get to know them better and to create a sense of familiarity; b) to acquire quantitative profiling parameters for the subsequent analyses. This preliminary procedure will be described in detail below, together with a presentation of the resulting variables.

3.1. *Profiling procedure: the Motivated Strategies for Learning Questionnaire (MSLQ)*

22 students (15 boys, 7 girls) took part in the activities on the first two days. Unfortunately, three students were absent from school due to personal reasons. Prof. S. B. arranged for the school library to be at my exclusive disposition for the entirety of the school day. In this context I managed to set up three simultaneously active individual test areas in order to optimize the experimental pipeline: 1) a conversation corner in which I personally conducted a preliminary interview; 2) a questionnaire corner in which the students filled in the items; 3) a pc corner in which the students completed the experimental trial described in Piccardi (2017a). The conversation corner was in the middle of the room, so that I was easily able to give assistance to those in the other two corners in case of need.

The preliminary interview consisted in a semi-structured conversation based on a printed topic guide. The information which I needed for profiling purposes were: the

¹¹ Here I am referring to the three dimensions of place identity (diachronic, internal, and teleological) formulated by Dematteis, Governa (2003).

¹² The school divides the town center from a fashion and textile industrial area, so that the technical programs are linked to these specific sectors.

¹³ The Italian *liceo* features 5-year educational programs. The “fifth” class of a *liceo* corresponds to the final year, with students aged 18-19.

student's name – place of birth – place of residence – significant relocations¹⁴ – number of foreign languages known and levels of proficiency – a qualitative commentary on the individual attitudes towards Florentine dialect use – musical proficiency – hearing impairments – parents' place of birth – parents' education level. Four conversation-inducing only topics were also advanced: perceived differences between the varieties spoken in Scandicci and Florence – domestic animals – favorite music genre – plans for the future. Other topics were spontaneously tackled over the course of the conversations.

In addition to this general information, I needed data on the features of the participants in their student role. In fact, I could not ascertain patterns of effectiveness of didactic methods without having an idea of the prior individual proneness to learning new concepts and partaking in challenging school activities in general¹⁵. Research on student engagement, a meta-construct used to examine the antecedents and consequences of a student's behavior, emotion, and cognition (Fredricks, Blumenfeld, Paris, 2004: 60-61), provides a rich array of self-assessment tools. In particular, I was interested in the cognitive side of engagement, which is defined as the «student's level of investment in learning. It includes being thoughtful, strategic, and willing to exert the necessary effort for comprehension of complex ideas or mastery of difficult skills» (Fredricks, McColskey, 2012: 764). Using comprehensive methodological meta-analyses (Fredricks, McColskey, Meli, Mordica, Montrosse, Mooney, 2011), I selected among other questionnaires the MSLQ. This tool was developed by Paul Pintrich as the culmination of ten years of research on course effectiveness assessment methods and student learning. After a development phase involving more than 1,700 test subjects (see García Duncan, McKeachie, 2005 for these historical remarks), the 44 item “junior high school” version was published in Pintrich, De Groot (1990)¹⁶. The MSLQ items concern two macrodomains: motivation and cognitive features of the students. The authors conducted factor analyses in order to construct subscales, resulting in 3 motivational (self-efficacy, intrinsic value, and test anxiety) and 2 cognitive (cognitive strategy use and self-regulation) sub-constructs¹⁷. The final scores are means of 7-point Likert scales ranging from 1 = [the statement reported in the test item is] *not at all true of me* to 7 = [the statement reported in the test item is] *very true of me*. In general, all the subscales but test anxiety are expected to manifest some degree of positive correlation with each other. Moreover, all the subscales but test anxiety are positive predictors of school achievement. For the purposes of this study, the MSLQ outshone other questionnaires because of its long-running tradition of application in correlation studies on the effect of courses on students (García Duncan,

¹⁴ While this point was mostly left to the student's subjective interpretation, I specified “more than one month away from your usual home” to provide partial guidance to most of the participants.

¹⁵ On a side note, I would argue that acquiring this type of data should be considered in the interest of any research protocol requiring student participation, and not only of SoTL. For example, Nodari (2015) succeeded in explaining sociolinguistic patterns by classifying her student participants in “attitude towards school” levels, but one should also expect differences in attention and motivation in task comprehension (and completion) leading to unexpected variability.

¹⁶ The following year, Pintrich, Smith, García, McKeachie (1991) published an extensive guide to the use of an 81-item MSLQ. The tool was validated in college context and showed a different factor structure compared to the 44-item version. Recent validation studies suggest that, in Western high school contexts, the 44-item MSLQ retains a factor structure which is similar to the original one (Bonanomi, Olivari, Mascheroni, Gatti, Confalonieri, 2018: 96-97). For this reason, in this study I adopt the more compact 44-item version of the MSLQ.

¹⁷ Leaving aside the self-explanatory test anxiety (4 items), self-efficacy (9 items) concerns the perception of competence and potential success in class activities, and intrinsic values (9 items) pertains to expressed interest, perceived importance of school activities, and preference for challenging tasks. Concerning the cognitive scales, cognitive strategy use (13 items) contains responses on the use of rehearsal, elaboration, and organizational strategies, and self-regulation (9 items) regards the deployment of metacognitive strategies (planning, skimming, and comprehension monitoring) and the student's persistence in learning.

McKeachie, 2005: 120); in addition to that, it has already been successfully translated into many languages and cultural contexts, including Asian and European countries (Fredricks *et al.*, 2011: 34). Crucially, the 44-item MSLQ has been recently validated in the Italian context using a multidimensional Rasch analysis on 1,071 high school questionnaires (Bonanomi *et al.*, 2018). In order to obtain an Italian version of the original MSLQ, I had the 44 items translated by an expert Italian psychologist and critically discussed this preliminary version with him while making final adjustments¹⁸. These included minor terminological revisions to adjust the inquiry to my specific context. See *Appendix A* for the MSLQ questionnaire used in this study.

The MSLQ was printed on paper sheets. The questionnaire was introduced by a brief explanation and a disclaimer in which I reassured the students that their answers would remain completely confidential.

One student at a time every 20 minutes came to the library from the V C classroom. First, the student sat with me in the conversation corner and signed an informed consent form. A Zoom H5 was mounted on a shockproof tripod and directed towards the student seat, recording with a quality of 24 bit, 48 KHz. I conducted the preliminary interview as an informal conversation, writing down the participant's responses without being obsessed with the presentation order. Spontaneous diversions were welcomed, and I used my position of in-group researcher to create a sense of familiarity (Cukor-Avila, Bailey, 2001) during our short interactions. I did not impose a time limit to the individual conversations, which lasted from 10 to 30 mins. each.

Then, I accompanied the student to the questionnaire corner, asking him/her to fill in the MSLQ. Again, no time limits were explicitly stated, and the task was completed in around 20 mins. Lastly, the participant was instructed to complete the psycholinguistic task (Piccardi, 2017a) at the pc corner for another 20 mins. Overall, each individual session lasted around 1 hour, and I managed to interview 11 students in a 6-hour school day.

3.1.1. *Data coding, MSLQ reliability and correlations*

To sum up, nine pertinent profiling variables were extracted from the interviews and questionnaires¹⁹. For the sake of the correlation analysis presented here, the categorical variables were dummy coded and then reverted to categorical in the following tests (see §4). The students' sex (1) was coded as follows: 1 = male, 0 = female, decided by coin flip. The answers to the questions about the participants' (and their parents') birthplaces, places of residence, and eventual relocations were aggregated into a single score, an adapted variant of the so-called Regionality Index (2) (RI; Chambers, Heisler, 1999). RI estimates the ethnic affiliation of the individual from a spatial point of view. Questions which were answered with "in Scandicci/Florence" were assigned a score of 0; "in the *Provincia di Firenze*" with 1; "outside the *Provincia di Firenze*" with 2. RI scores can range from 0 (pure local) to 8 (pure outsider). Regarding the students' explicit attitudes towards the Florentine dialect (3), I opted to summarize their personal narratives in two categories: Positive (nine students; random dummy coding: 1) and Nonpositive (thirteen students, including those with neutral and negative attitudes; random dummy coding: 0)²⁰. Dialect

¹⁸ Unfortunately, the Italian translation of the MSLQ validated in Moretti, Giuliani, Morini (2018) was not available at the time of this phase of the research.

¹⁹ The other topics tackled during the interviews (e.g., number of foreign languages known) were related to the project described in Piccardi (2017a) and will not be considered here.

²⁰ A selection of these materials was transcribed, and a few anonymous excerpts were used for another didactic project (<https://youtu.be/pIJsHONIQpg> and https://youtu.be/yabmL5DI_iQ). Neutral and

awareness and enthusiasm conditioned the student attribution to the Positive category. In order to reduce the arbitrariness of this clustering process, the recordings were submitted to two independent raters of very diverse age and education level, and the category was assigned by majority rule. Nonetheless, given the small sample size, I realized that minority solutions potentially impacted the role of this variable in the analyses presented below (§ 4). For this reason, the results concerning dialect attitude should be considered provisional and in need of substantial verification through more systematic clustering techniques. The education level of the participants' parents (4) was roughly scored by calculating the mean between the number of qualifications obtained by the father and the mother of the students (e.g., 1 = primary school degree; 4 = university degree). Lastly, the processing of the MSLQ responses consisted in averaging the Likert scores pertaining to each of the five main factors of the questionnaire (5-9) (self-efficacy, intrinsic value, test anxiety, cognitive strategy use, and self-regulation).

The Cronbach alpha of my Italian version of the MSLQ was calculated in R (R Core Team, 2022). The resulting coefficients (whole questionnaire: $\alpha = 0.89$; self-efficacy: $\alpha = 0.69$; intrinsic value: $\alpha = 0.86$; test anxiety: $\alpha = 0.88$; cognitive strategy use: $\alpha = 0.79$; self-regulation: $\alpha = 0.78$) suggested an acceptable level of internal consistency. Then, in order to get a clearer picture of the relationships between the profiling variables, I ran several correlation analyses (Pearson, point-biserial) between the five MSLQ components and the other variables which had been extracted during the preliminary conversations. As is reported in Tab. 1, with very few exceptions, the coefficients are not high, and none of them is statistically significant after a Bonferroni correction setting α to 0.0025. In other words, the student engagement in the class which constitutes my small sample does not strictly depend on its sociodemographic composition. Neither the student's sex, nor his/her local affiliation or family background correlate significantly with his/her investment in learning and performing in school activities. Dialect attitude was also unrelated.

Table 1. *Coefficients of the correlations between the five MSLQ factors and the other profiling variables. For each variable descriptive statistics are reported in the format [mean – standard deviation]*

	Sex	RI [2.68 – 1.82]	Parents' Education [3.09 – 0.65]	Dialect attitude
<i>Self-Efficacy</i> [4.56 – 0.66]	0.13	-0.23	0.07	0.22
<i>Intrinsic Value</i> [4.99 – 0.86]	-0.29	-0.43	-0.12	0.15
<i>Test Anxiety</i> [3.76 – 1.55]	-0.32	-0.09	-0.31	-0.15
<i>Cognitive Strategy Use</i> [5.25 – 0.82]	-0.32	-0.46	-0.25	0.30
<i>Self-Regulation</i> [4.64 – 0.92]	-0.28	-0.47	-0.13	0.12

negative attitudes were clustered together with the aim of limiting the complexity of the models shown in §4 (see below).

4. THE TEACHING EXPERIMENT

Now that I had got to know the V C class better, I was ready to embark on my two-day high school teaching experience. In this chapter, I will provide a detailed account of my experiment, with focus on the slide and test construction processes. The selection of an adequate test scoring procedure will also be of interest. Lastly, in the quest for an answer to my main research question (*Do repeated references to Japanese pop culture topics enhance students' performances in tests on challenging linguistic subjects?*) I will rely on regression analyses. By doing so, I will also attempt to discern the effects on student performances of other plausibly conditioning factors, such as the students' level of school engagement. In particular, I expect that:

- a) *Kawahara's method leads to better test results than does a regular introductory lesson.*
- b) *The effectiveness of Kawahara's method grows along with the number of Japanese pop culture references in the lesson materials.*

- *Participants and setting*

22 students (7 girls, 15 boys) participated in my small language awareness program. Unfortunately, 3 students, whom I had previously interviewed, were absent during my lessons, so that I ended up with 19 complete profiles (i.e., interview + test scores) and 3 test results without any background information about the student. Since I needed to contrast Kawahara's method with a teaching method without any Japanese pop references, I asked Prof. S. B. for two blocks of two consecutive school hours, one for what we will call the "Pokémon" condition and the other for the "standard" condition. Prof. S. B. managed to convince the physical education teacher to join our cause, and he supervised half of the V C members in an empty classroom while I administered one of the two lessons to the other half in their regular classroom. 12 students partook in the standard session (10 + 2 without background information), while 10 students were present at the Pokémon lesson (9 + 1 without background information). The V C classroom had a fixed hanging projector and a motorized screen behind the teacher's desk, which I used for my slides. The two lessons took place on the same weekday in two consecutive weeks.

Research on the effects of teacher attire suggest that clothing can condition students' perceptions of instructors and even correlate to some extent (without, of course, implying direct causality) with their learning achievements (Roach, 1997). Therefore, instructor clothing may represent a crucial point in achieving experimental control (and avoid experimenter effects) in SoTL. For my two lessons, I decided to follow Lukavsky, Butler, Harden (1995) and dress with the same "moderate" clothing (a shirt with jeans) to achieve balanced approachability and respect.

- *Materials*

Leaving aside the goals of this SoTL experiment, the awareness program which I planned together with Prof. S. B. aimed to provide the V C students with a university-level experience leading them towards grasping the general concepts of my tests on sound symbolism. This implied tackling a great variety of topics in a small amount of time, namely: arbitrary and iconic aspects of the linguistic sign; quasi-universality of sound-symbolism (and its exceptions); its main explanatory attempts (frequency code and synesthesia: Ohala, 1984; Ramachandran, Hubbard, 2001); some practical applications of sound-symbolic associations; the effects of social meaning on sound symbolism; spectrograms and subsegmental cues. I started off by elaborating on these key concepts

and writing down a sort of topic guide. Then, I built around this fragmentary text two sets of PowerPoint slides.

After several contradictory studies, recent meta-analytic efforts clarified that slides do not enhance per se students' learning achievements, while they are indeed perceived as an enjoyable addition to a traditional lesson (Baker, Goodboy, Bowman, Wright, 2018). Nevertheless, the use of slides in this experiment was extremely expedient for achieving control over two factors, i.e., the time dedicated to each topic and the number of references to Japanese pop culture in the Pokémon condition. The final slideshows included 21 elements (introduction, ending, and 19 pure content slides) each. Aside from topic labels, the use of typed text was generally kept to a bare minimum; in fact, overloading the visual channel by simultaneously presenting text and other media risks engendering redundancy and hindering students' learning (Mayer, 2002: 66-67; Cooper, 2009). Moreover, I tried to further reduce the students' cognitive load by adding animations to the single elements of the slides and creating a "sequenced" presentation in which the relevant information is gradually disclosed to the audience (Bolkan, 2019). To sum up, I strived to counterbalance the density and complexity of the information flow with a lesson format which is reportedly fun and easy to process.

Passages of the topic guide were inserted into the note section of PowerPoint presenter view. The same excerpts were pasted in both slideshows, thereby ensuring some level of terminological consistency between the two lessons (i.e., conditions). On the other hand, the set of examples varied across the two conditions. In the Pokémon condition, I replaced some of the exemplificatory materials with data taken from Kawahara and colleagues' "catchy" studies or with thematically congruous alternatives. This was not always possible, and some slides remained identical across conditions. The media elements of the slides included images, audio, and short videos. Where possible, I relied on materials from the reference papers or their supplements. By doing so, I tried to familiarize my audience with the actual elements of the academic toolbox. See *Appendix B* for a full account of the structure of the slides.

After the completion of the slideshow, I modeled my evaluation tool. Multiple choice tests are one of the most common (if not the most common) formats for assessing learning achievements (Haladyna, Rodriguez, Stevens, 2019: 350). Research on its components can count on a long tradition of studies, which was summarized in influential guideline reviews (e.g., Haladyna, Downing, Rodriguez, 2002). Crucially, violating these guidelines has been proved to be detrimental to both test reliability and student achievement (Pate, Caldwell, 2014). Nonetheless, this format faces an apparently insurmountable hurdle: the selection of a scoring method which can approximate the "true" knowledge of the students. This point is not trivial and is full of ethical consequences. To sum it up drastically (e.g., Vanderroost, Janssen, Eggermont, Callens, De Laet, 2018), there are two main scoring strategies in multiple choice testing: number right scoring and negative marking. The former consists in equating the final score to the number of correct answers; however, this method is defenseless against random guessing by students. The latter seeks to overcome this limitation by deducting marks from the total for each wrong answer. Unfortunately, negative marking triggers complex interactions with features of the students' personality. In this scenario, students who are more prone to risk aversion tend to leave answers blank, even when expecting a positive score. Moreover, women apparently lean toward risk aversion behaviors: thus, negative marking risks discriminating against significant subsets of the student population. This issue has led researchers to move on and evaluate alternative scoring methods (Lesage, Valcke, Sabbe, 2013; Vanderroost *et al.*, 2018). Because of the limited time at my disposal, I could not afford to force my participants to adapt to an unusual scoring method. Therefore, I relied on Espinosa, Gardeazabal (2010) who, through mathematical

simulations, suggested that the optimal score penalty for wrong answers (both in terms of approximating student knowledge and reducing discrimination) is well above the typical $-1/(M-1)$, where M stands for the number of possible choices. In my instance, I provided three choices to each question: in fact, this format optimizes response time without any major drawbacks (Haladyna *et al.*, 2019). Therefore, the score penalty for wrong answers was set to -0.75 (which is higher than $-1/(3-1) = -0.5$).

The 20 sets of stems, keys, and distractors were prepared in compliance with Haladyna *et al.* (2002) guidelines. Particular attention was given to the third point of their taxonomy, i.e., «use novel material to test higher level learning [...] [and] to avoid testing for simply recall» (*ibid.*: 312). As the slides changed across conditions, I could not refer to any of the examples which had already been tackled during the lessons. For this reason, I formulated my stems with reference to a third set of examples. By doing so, I was able to test for the knowledge of the taught concepts using the same questionnaire for both conditions²¹.

Following Kawahara, Kumagai (2019b) concerns, I added a 7-question appendix to the test in order to quantitatively score the familiarity with the Pokémon franchise of the individual student. This section was evaluated using number right scoring. Consistent exposure to Pokémon during childhood can induce facilitations in the visual processing of their images (Gomez, Barnett, Grill-Spector, 2019). In general, Pokémon proficiency could be a moderator of the results of the Pokémon condition. Moreover, the appendix served as a fun conclusion to the intense program. See *Appendix C* for the whole questionnaire.

- *Procedure*

The lessons were administered in the following order: standard – Pokémon. From the point of view of speech style, I tried to exploit my position of in-group researcher and talk in an informal tone, without disguising my Florentine accent. In fact, using the students' local variety when teaching can trigger the so-called personalization effect, which bolsters their performances in information retention and transfer to novel contexts (Rey, Steib, 2013). Each lesson lasted around 55 minutes. By using PowerPoint presenter view, I constantly kept track of the time which I spent on each of the slides, aiming at 2.5 minutes per slide ratio. Class interactivity was encouraged at specific points during the lesson. For example, the first six content slides involved the class partaking in classic tests on sound symbolism (see *Appendix B*). Other unsolicited interruptions and requests were discouraged and answered in the last part of the two-hour block.

After the lesson, I gave to each student a printed copy of the questionnaire. Task instructions explained the scoring system and informed them of a 30-minute time limit. Students were not allowed to ask for clarifications concerning the questions. Lastly, in the remaining time in the two-hour blocks, I tried to answer any questions which came to the mind of the students, usually including curiosities about the tests, the academic world, and myself. For any other doubts, I gave them my contact information.

- *Analysis and results*

Because of the objective complexity of the questionnaire, mean score was quite low (7.61; SD: 3.44; min. 0.5/20, max 14.75/20). Knowledge of the Pokémon franchise was average (3.86; SD: 1.28; min. 2/7, max. 6/7). Even though the Pokémon results were higher, mean scores of the two conditions (standard = M: 6.66, SD: 3.99; Pokémon = M: 8.75, SD: 2.11) were not significantly different (two-tailed t test: $t(20) = -1.42$, $p = 0.17$).

²¹ A Linguistics Professor was asked to review the whole questionnaire and to assess its difficulty level. In her view, the test was suitable for second year undergraduates.

To test for the effects of other factors on the scores (and their interactions with the Condition variable), I ran several regression analyses on my reduced dataset. The reduced dataset consisted of 19 observations (M: 7.72; SD: 2.84; 10 standard: M: 6.47; SD: 2.97; 9 Pokémon: M: 9.11; SD: 1.91). Note that in this reduced dataset, the difference between the two conditions reaches significance (two-tailed t test: $t(17) = -2.15$, $p = 0.046$). Unfortunately, the small number of observations did not allow the creation of a single model including all the independent variables at the same time (e.g., Austin, Steyerberg, 2015). The five MSLQ factors, the participant's sex, RI, parents' education level, familiarity with Pokémon, and dialect attitude were inserted as predictors (both together with and as interaction term with Condition) in separate models with the final score as dependent variable.

Table 2 shows the model with the Condition predictor only.

Table 2. *Baseline linear regression model including Condition as predictor of total test score (F: 4.632 on 1 and 17 DF, $p = 0.046$; Multiple R²: 0.21, Adjusted R²: 0.17)*

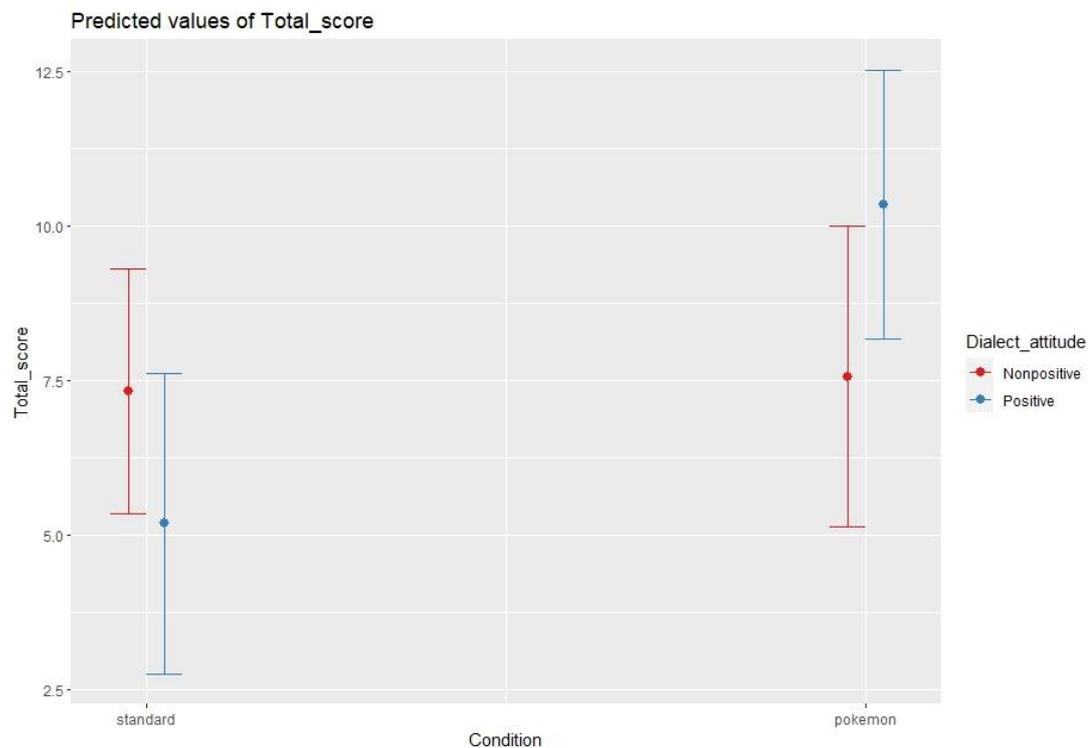
	<i>Estimate</i>	<i>Std. Error</i>	<i>t value</i>	<i>Pr(> t)</i>
<i>(Intercept)</i>	9.11	0.89	10.25	<0.001 ***
<i>Condition [Standard]</i>	-2.64	1.22	-2.15	0.046 *

The only model showing additional significant factors was the one with the Condition*Dialect attitude interaction term. Comparisons between relative goodness of fit indices do not provide definitive proof in favor of this addition (AIC: baseline 95.07, interaction 93.99; BIC: baseline 97.09, interaction 98.71). Nonetheless, since none of the other models revealed significant predictors other than Condition, and dialect explicit attitudes are of general sociophonetic interest, it seems reasonable to present this result in more detail. Table 3 shows the Condition*Dialect attitude model, and Figure 2 reports its interaction plot.

Table 3. *Linear regression model predicting total test score from a Condition*Dialect attitude interaction (F: 3.31 on 3 and 15 DF, p -value: 0.049; Multiple R-squared: 0.40; Adjusted R-squared: 0.28)*

	<i>Estimate</i>	<i>Std. Error</i>	<i>t value</i>	<i>Pr(> t)</i>
<i>(Intercept)</i>	7.56	1.24	6.09	<0.001 ***
<i>Condition [Standard]</i>	-0.23	1.60	-0.14	0.89
<i>Condition [Standard] * Dialect attitude [Positive]</i>	-4.93	2.31	-2.13	0.0498*
<i>Dialect attitude [Positive]</i>	2.79	1.67	1.67	0.12

Figure 2. *Interaction plot of the model shown in Tab. 3. Students who have positive explicit attitudes towards the Florentine dialect perform better in the Pokémon condition*



The students who expressed a positive opinion on the Florentine dialect performed better in the Pokémon condition. Conversely, the nonpositive sub-groups obtained similar scores in the two conditions²².

If the references to Japanese pop culture were to have some positive effect on the students' information retention, we would expect the students to answer more correctly when the questions referred to presentation chunks with many Japanese pop culture-related media and examples. To substantiate this point, I formulated a generalized linear mixed effect model (lme4 package: Bates, Maechler, Bolcher, Walker, 2015, family set to "binomial") in order to try and predict the students' individual scores (coded as 1 = correct answer; 0 = missing or wrong answer) to each question ($n = 380$) from an interaction between Condition and the number of the media elements in the slide pertinent to the specific question which varied across conditions (see *Appendix B*)²³. The number of "Varying Media" were expected to positively affect the results of the students who attended the Pokémon condition only. An expectation-driven Condition*Dialect attitude interaction was inserted as a control. Student and Question were inserted as random effects; however, since the variance pertaining to the "Student" effect was

²² The Dialect attitude categories were distributed as follows: Positive (standard: 4, Pokémon: 5); Nonpositive (standard: 6, Pokémon: 4).

²³ This variable was coded as the sum of the PowerPoint sequences containing specific images, audios, and videos in the Pokémon slides, but not in the Standard ones. Sequences comprised exclusively of text typed by the author or graphic elements (lines, arrows, etc.) did not count towards the total. For example, in the slide on the arbitrariness of the linguistic sign, the Standard condition presented the Saussurean *arbor* image, while the Pokémon had one of the fantasy creatures surrounded by the different localizations of its name across the world languages. Hence, the question on the arbitrariness referred to one varying media across conditions.

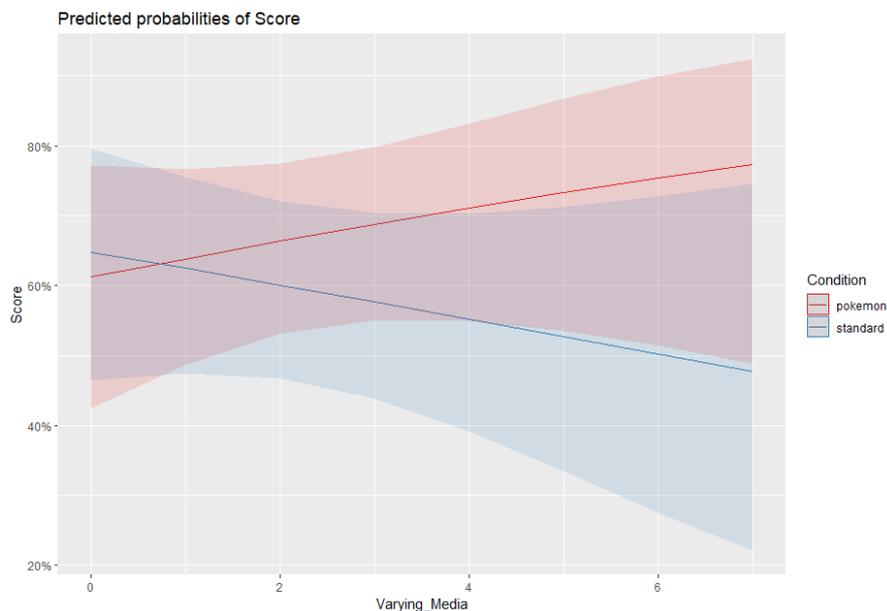
approximately zero (triggering convergence issues), I removed it from the analysis. Table 4 reports the summary of the fixed effects, while Figure 3 plots its interaction.

Table 4. *Fixed effects of the generalized linear mixed effect model trying to predict binary-coded single scores from a Condition*Varying Media interaction. Question was inserted as random effect (variance: 0.98, std. dev.: 0.99)*

	Estimate	Std. Error	z value	$Pr(> z)$
(Intercept)	0.46	0.39	1.18	0.240
Condition [Standard]	0.15	0.32	0.47	0.638
Condition [Standard]*Varying Media	-0.21	0.10	-2.05	0.041*
Varying Media	0.11	0.12	0.90	0.367

The results suggest that, while the questions referring to identical slides across conditions elicit almost homogeneous scores, the students in the Pokémon condition replied better than their Standard counterparts to the questions regarding topics which were explained to them in a different teaching style, i.e., through a consistent number of references to Japanese pop culture²⁴. While the expected behavioral difference between conditions was retrieved, the plot does not suggest dramatic score improvements induced by the number of varying media in the results of the “Pokémon” students. This was verified through a subsequent model including the answers of this subset of participants only (N = 180) and varying media as fixed factor (est. 0.08, std. error 0.11, $p = 0.46$). The interaction with Dialect attitude was not significant in the generalized mixed model (and therefore pruned from the summary), suggesting that it should be taken as uncertain at best (cf. § 3.1.1).

Figure 3. *Interaction plot from the model summarized in Tab. 4. The interaction terms were inverted for the sake of clarity. The number of varying media positively affects the results of the Pokémon condition: students scored better when the topics were exemplified through a consistent number of references to Japanese pop culture*



²⁴ This interaction was replicated as a consistent trend in a model containing the full pool of answers (N = 440): est. -0.18, st. error 0.09, $p = 0.053$.

5. GENERAL DISCUSSION

This paper tried to provide a quantitative assessment of Shigeto Kawahara's didactic strategy. Given the previous observations, I expected a significant improvement in the students' performances when basic linguistic concepts were taught to them via references to popular Japanese phenomena and media franchises, such as Pokémon. Despite the small number of participants, the results of the analysis presented here may be of some relevance for modeling future SoTL and linguistics studies.

The main research question was answered with promising results. The students in the Pokémon condition did perform better than those attending the standard lesson. This trend reached significance when a student subsample was taken into account out of necessity. Thus, it will be of interest to future studies to broaden the pool of participants and investigate the generalizability of the Pokémon effect. Moreover, the mixed model analysis of the cumulative effects of the multiple exemplifications through Pokémon described the effectiveness of Kawahara's method on a finer level of detail. The positive effect of the Pokémon condition was not constant across the whole lecture. The students benefited from the fun and humorous content only when Pokémon (or similar Japanese topics) were consistently used to exemplify the key concepts. Moreover, this effect was gradient: the students' response accuracy grew along with the number of Pokémon examples used to teach the topics which were pertinent to the related question. A long tradition of studies explored the effects of fun and humor on student learning (Banas, Dunbar, Rodriguez, Liu, 2011). Crucially, one of the earliest acquisitions of this line of research (Kaplan, Pascoe, 1977) states that humor does not increase information retention per se: its effect is limited to those topics which are explained through funny examples. In other words, the role of humor in learning is to help recall key examples. Moreover, the humor effect grows as time passes by. This may explain why the improvements in the results of the students attending to the Pokémon lesson were only tendential: indeed, the effects of the humorous examples were examined through a test which took place immediately after the lessons.

None of the five factors of student engagement managed to significantly interact with Condition. This implies that the effectiveness of Kawahara's method is independent of the individual student's strategies for learning. Nonetheless, the results related to the MSLQ factors may raise some perplexity. In fact, not only were the MSLQ factors extraneous to the effects of Condition but apparently, they were also unrelated to the final scores per se. Of course, increasing the number of observations may fix this unexpected result. However, note that the MSLQ was conceived with the aim of assessing student engagement at the course, and not at the single-lesson level (García Duncan, McKeachie, 2005: 118). Thus, the MSLQ inefficacy may imply that the V C students did not interpret my awareness program as a spinoff of Prof. S. B.'s course; conversely, they may have partaken in the lessons as a standalone experience, which is unrelated to the MSLQ cognitive and motivational constructs. Kawahara's didactic method originated from the success of single lectures (Kawahara, 2013a). However, in its current form, it relies on catchy examples over the course of multiple lessons (Figure 1). For this reason, future assessments should investigate its didactic value in its natural habitat, i.e., in the context of an entire university course²⁵.

Dialect attitude was the only control factor contributing to some extent to the explanation of the student test scores. Over the course of this work, I have underlined some critical issues concerning this variable and its outcomes, namely a) given the small

²⁵ On a minor note, familiarity with Pokémon also failed to predict final scores. One may argue that the positive effects of Kawahara's method are not fanbase-dependent; indeed, they may be explained with reference to the general consequences of "fun contents" on student learning.

pool of responses, the subjective interpretation of the individual attitude polarity weighs considerably on the reliability of the results; and b) given the adopted majority rule coding, the results seem overall weak, since the significance of the interaction with Condition is not replicated at a finer level of analysis (i.e., the mixed model). Thus, the dialect attitude component of this study should be considered as far from definitive. Nonetheless, in the remainder of this chapter, I will tentatively explain why the evaluation of the teacher's accent could represent an intriguing link between sociophonetics and SoTL. In this regard, it should be recalled that I taught the contents of my two lessons with my unsuppressed Florentine accent.

As I mentioned in the *Procedure* section of the previous chapter, the features of the teacher's voice can impact students' information processing and, consequently, class performances. The teacher's accent or dialect is one of those conditioning features. In general, students tend to more efficient information processing when the lesson is taught in their own dialect/accents, and this may depend on both general cognitive optimization processes and affective aspects of communication (Finkelstein, Yarzebinski, Vaughn, Ogan, Cassell, 2013). Multimedia learning research framed these results in the so-called personalization effect (see Rey, Steib, 2013 for a review). Students achieve better results when the lesson style evokes a sense of social presence, has strong self-references and triggers familiarity through personal messages. Rey, Steib (2013) managed to reproduce the personalization effect by comparing the outcomes of two lessons, one presented in standard German, while the other in an Austrian dialect to 210 Austrian pupils. However, as Brom, Hannemann, Stárková, Bromová, Děchtěrenko (2017) pointed out, the personalization effect does have linguistic and cultural boundaries. In their Czech sample, students explicitly disliked informal lesson styles; consequently, the personalization effect failed to be replicated. Thus, from the point of view of dialect, we may expect that the students who manifest positive attitudes or expectations towards it can benefit from its use, while this effect cannot be replicated with dialect neutral or adverse students.

In our linear regression analysis, Dialect attitude interacted with Condition, suggesting that this personalization pattern can only partially explain what took place during the didactic experiment. In fact, test results were not modulated by explicit attitudes alone, but jointly with modality of presentation. Ahn (2010) correlated scales of explicit attitudes towards accented varieties of English and student achievements pertaining to lessons presented in the same varieties. Curiously, results reached significance for Asian accents only, while achievements after European accented lessons were unrelated to language attitudes. In Ahn's work, students were taught about the functionalities of a well-known statistical software. Could it be that the stereotypical associations between Asian ethnicities and mathematical "innate" skills (e.g., McGee, Thakore, LaBlance, 2017) engendered an association-driven transfer between the valence of the accent attitude towards Asian speech and the attention paid by the student to the lesson? If we assume that acoustic inputs and extralinguistic concepts share the same cognitive representation (e.g., Hay, Drager, 2010), we may expect that associating the cues of a specific speech variety to a general valence can facilitate assigning the same valence to the concepts which are stereotypically linked to the speakers of that variety. Following this line of reasoning, the personalization effect should reach its peak when a) the student is generally favorable to the "personalized" lecture style and b) the "personalized" lecture is presented together with concepts which are congruent with its style. The results of a classic study on the personalization effect could be interpreted in a similar way. Moreno, Mayer (2000) tested for the effectiveness of personalization on student information retention and transfer using both media presentations and agent-based computer games. While personalization had a positive effect on transfer in both conditions, an amelioration of the students' information retention was observed in the computer game condition only. Again, it could

be that the more engaging style of the personalized condition worked better in the most engaging presentation modality, i.e., the gamified one.

In the Tuscan dialect system, the pervasiveness of local features grows along with the informality of the conversation topic (Calamai, 2017: 216). Thus, the students who manifested positive opinions on the local dialect may have been led by my accented voice to pay more attention to the “catchy”, fun presentation strategy of Kawahara’s method, which lowers the degree of formality of a frontal lecture. Conversely, the potential benefits of Kawahara’s methods were blocked for the students who did not explicitly like the variety used to personalize the lessons. Be that as it may, an intriguing intersection of the effects of the teacher’s voice, the students’ language attitudes, and the lesson style on student achievement can be tentatively posited and considered worthy of future sociophonetics/SoTL joint investigations.

6. CONCLUSIONS: CURRENT LIMITATIONS AND FUTURE PERSPECTIVES

This study highlighted the didactic potential of Kawahara’s method for teaching linguistics/phonetics introductory concepts. By doing so, it tried to answer one of the current needs of the research enterprise on teaching linguistics, i.e., the development of compact quantitative procedures for method assessment. The student’s involvement in acquiring new knowledge, the teacher’s demeanor, and the scoring strategy are just some examples of the factors which should be taken into account when developing an assessment research design.

The references to Japanese pop culture had some impact on test results. As I underscored in the previous section, this effect probably does not pertain to the specific instance of Kawahara’s method but can be framed in the general strategy of using fun and humorous contents to bolster the students’ information recall. This implies that an optimal implementation of Kawahara’s method should rely on a wide array of pertinent examples, which should be equally distributed across the lessons of a course. Thus, it can be argued that the dedicated expansion of Kawahara’s (2017c) teaching materials is an essential aspect of its success.

As a significant drift from academic formality, Kawahara’s method can be divisive among students. In this paper, I tentatively argued that the informality of the method can significantly interact with the students’ liking of speech conventionality. When presented in the Florentine dialect, Kawahara’s method was polarizing: while it drew the attention of dialect lovers, the other students were left unaffected.

Future research should bolster the generalizability of these observations. This should be done by both increasing the number of students and testing the method in more canonical circumstances, i.e., university lectures. Moreover, the MSLQ failure pointed towards the need for assessing the method effectiveness in the context of a whole university course. From the point of view of the general design strategy, follow-ups should take into account the style of the teacher’s speech as an independent variable. In addition to this, the assessment procedure should draw a line between the effects of Kawahara’s method on information retention and transfer.

Lastly, this study suggested a novel intersection of sociophonetics with SoTL. A more rigorous approach to the assessment of student attitudes towards local varieties should be implemented in order to rule out subjectivity from variable construction processes. Recent research suggested that student attitudes change when the evaluated variety is uttered by teachers vs. other professional roles (Hänsel, Westphal, Meer, Deuber, 2022). For this reason, future explicit attitude profiling techniques in SoTL should be more context specific. Moreover, with the refinement of implicit analytical procedures (Calamai,

Ardolino, 2020), language attitude research in the school context is blossoming into new levels of methodological and conceptual refinement. Ensuing studies should take advantage of these acquisitions and focus on the student's perception of the teacher's accent and the plausible interconnections between explicit/implicit attitude scores and the success of specific teaching methods.

REFERENCES

- Ahn J. (2010), *The Effect of Accents on Cognitive Load and Achievement: The Relationship between Students' Accent Perception and Accented Voice Instructions in Students' Achievement*, Ph.D. Dissertation, Ohio University:
https://etd.ohiolink.edu/apexprod/rws_etd/send_file/send?accession=ohiou1282580640&disposition=inline.
- Austin P. C., Steyerberg, E. W. (2015), "The number of subjects per variable required in linear regression analyses", in *Journal of Clinical Epidemiology*, LXVIII, 6, pp. 627-636.
- Baker J. P., Goodboy A. K., Bowman N. D., Wright A. A. (2018), "Does teaching with PowerPoint increase students' learning? A meta-analysis", in *Computers & Education*, CXXVI, pp. 376-387.
- Banas J. A., Dunbar N., Rodriguez D., Liu S.-J. (2011), "A Review of Humor in Educational Settings: Four Decades of Research", in *Communication Education*, LX, 1, pp. 115-144.
- Bateman N., Hudgens Henderson M. (eds.) (2021), "Linguistics in High School", *Proceedings of the Linguistics Society of America*, VI, 3.
- Bates D., Maechler M., Bolker B., Walker S. (2015), "Fitting Linear Mixed-Effects Models Using lme4", in *Journal of Statistical Software*, LXVII, 1, pp. 1-48.
- Berent I. (2017), *The human language faculty: embodied or abstract?* Psycholinguistics Seminar course information, Northeastern University, Spring semester.
- Berlin B. (2006), "The First Congress of Ethnozoological Nomenclature", in *Journal of the Royal Anthropological Institute*, XII, S1, pp. 23-44.
- Berlin B., Kay P. (1969), *Basic Color Terms: Their Universality and Evolution*, University of California Press, Berkeley.
- Bolkan S. (2019), "Facilitating student attention with multimedia presentations: examining the effects of segmented PowerPoint presentations on student learning", in *Communication Education*, LXVIII, 1, pp. 61-79.
- Bonanomi A., Olivari M. G., Mascheroni E., Gatti E., Confalonieri E. (2018), "Using a multidimensional Rasch analysis to evaluate the psychometric properties of the Motivated Strategies for Learning Questionnaire (MSLQ) among high school students", in *Testing, Psychometrics, Methodology in Applied Psychology*, XXV, 1, pp. 83-100.
- Bremner A. J., Caparos S., Davidoff J., de Fockert J., Linnell K. J., Spence C. (2013), "«Bouba» and «Kiki» in Namibia? A remote culture make similar shape–sound matches, but different shape–taste matches to Westerners", in *Cognition*, CXXVI, 2, pp. 165-172.
- Brom C., Hannemann T., Stárková T., Bromová E., Děchtěrenko F. (2017), "The role of cultural background in the personalization principle: Five experiments with Czech learners", in *Computers & Education*, CXII, pp. 37-68.
- Calamai S. (2017), "Tuscan between standard and vernacular: a sociophonetic perspective", in Cerruti M., Crocco C., Marzo S. (eds.), *Towards a New Standard*.

- Theoretical and Empirical Studies on the Restandardization of Italian*, De Gruyter, Boston, pp. 213-241.
- Calamai S., Ardolino F. (2020), "Italian With an Accent: The Case of "Chinese Italian" in Tuscan High Schools", in *Journal of Language and Social Psychology*, XXXIX, 1, pp. 132-147.
- Chambers J. K., Heisler T. (1999), "Dialect Topography of Québec City English", in *Canadian Journal of Linguistics*, XLIV, 1, pp. 23-48.
- Cooper E. (2009), "Overloading on Slides: Cognitive Load Theory and Microsoft's Slide Program PowerPoint", in *Association for the Advancement of Computing in Education Journal*, XVII, 2, pp. 127-135.
- Cukor-Avila P., Bailey G. (2001), "The effects of the race of the interviewer on sociolinguistic fieldwork", in *Journal of Sociolinguistics*, V, 2, pp. 254-270.
- Dematteis G., Governa F. (2003), "Ha ancora senso parlare di identità territoriale?", in De Bonis, L. (ed.), *Atti del Convegno internazionale La nuova cultura delle città: trasformazioni territoriali e impatti sulla società*, Accademia Nazionale dei Lincei, Roma, pp. 264-281.
- Drijvers L., Zaadnoordijk L., Dingemanse M. (2015), "Sound-symbolism is disrupted in dyslexia: Implications for the role of cross-modal abstraction processes", in Noelle D., Dale R., Warlaumont A. S., Yoshimi J., Matlock T., Jennings C. D., Maglio P. P. (eds.), *Proceedings of the 37th Annual Meeting of the Cognitive Science Society (CogSci 2015)*, Cognitive Science Society, Austin, pp. 602-607.
- Eckert P. (1989), *Jocks and burnouts: Social categories and identity in the high school*, Teachers College Press, New York.
- Eckert P. (1997), "Age as a Sociolinguistic Variable", in Coulmas F. (ed.), *The Handbook of Sociolinguistics*, Blackwell, Oxford-Cambridge, pp. 151-167.
- Espinosa M. P., Gardezabal J. (2010), "Optimal correction for guessing in multiple-choice tests", in *Journal of Mathematical Psychology*, LIV, 5, pp. 415-425.
- Filimonova V. (2020), "Problem-based learning in introductory linguistics", in *Language*, XCVI, 1, 1-21.
- Finkelstein S., Yarzebinski E., Vaughn C., Ogan A., Cassell J. (2013), "The Effects of Culturally Congruent Educational Technologies on Student Achievement", in Lane H. C., Yacef K., Mostow J., Pavlik P. (eds.), *Artificial Intelligence in Education. 16th International Conference*, Springer, Berlin/Heidelberg, pp. 493-502.
- Fredricks J. A., Blumenfeld P. C., Paris A. (2004), "School engagement: Potential of the concept, State of the evidence" in *Review of Educational Research*, LXXIV, 1, pp. 59-119.
- Fredricks J. A., McColskey W., Meli J., Mordica J., Montrosse B., Mooney K. (2011), *Measuring student engagement in upper elementary through high school: A description of 21 instruments (Issues & Answers Report, REL 2010 – No. 098)*, Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Southeast, Washington, U.S <https://files.eric.ed.gov/fulltext/ED514996.pdf>.
- Fredricks J. A., McColskey W. (2012), "The Measurement of Student Engagement: A Comparative Analysis of Various Methods and Student Self-report Instruments", in Christenson S. L., Reschly A. L., Wylie C. (eds.), *Handbook of Research on Student Engagement*, Springer, Boston, pp. 763-782.
- Giannelli L. (2000), *Toscana*, Pacini, Pisa.
- García Duncan T., McKeachie W. J. (2005), "The making of the motivated strategies for learning questionnaire", in *Educational Psychologist*, XL, 2, pp. 117-128.
- Godoy M. C., de Souza Filho N. S., de Souza J. G. M., França H. A. N., Kawahara S. (2020), "Gotta Name'em All: an Experimental Study on the Sound Symbolism of

- Pokémon Names in Brazilian Portuguese”, in *Journal of Psycholinguistic Research*, XLIX, 5, pp. 717-740.
- Gold R., Segal O. (2017), “The bouba-kiki effect and its relation to the Autism Quotient (AQ) in autistic adolescents”, in *Research in Developmental Disabilities*, LXXI, pp. 11-17.
- Gomez J., Barnett M., Grill-Spector K. (2019), “Extensive childhood experience with Pokémon suggests eccentricity drives organization of visual cortex”, in *Nature human behavior*, III, pp. 611-624.
- Grauerholz L., Main E. (2013), “Fallacies of SOTL: Rethinking How We Conduct Our Research”, in McKinney K. (ed.), *The scholarship of teaching and learning in and across disciplines*, Indiana University Press, Bloomington and Indianapolis, pp. 152-168.
- Guillamón P. M. (2013), “Vowel-colour symbolism in English and Arabic: a comparative study”, in *Miscelánea: A Journal of English and American Studies*, XLVII, pp. 31-52.
- Haladyna T. M., Downing S. M., Rodriguez M. C. (2002), “A Review of Multiple-Choice Item-Writing Guidelines for Classroom Assessment”, in *Applied Measurement in Education*, XV, 3, pp. 309-334.
- Haladyna T. M., Rodriguez M. C., Stevens C. (2019), “Are Multiple-choice Items Too Fat?”, in *Applied Measurement in Education*, XXXII, 4, pp. 350-364.
- Hänsel E. C., Westphal M., Meer P., Deuber D. (2022), “Context matters. Grenadian students’ attitudes toward newscasters’ and teachers’ accents”, in *Journal of Pidgin and Creole Languages*, XXXVII, 1, pp. 16-52.
- Hay J., Drager K. (2010), “Stuffed toys and speech perception”, in *Linguistics*, XLVIII, 4, pp. 865-892.
- Hiramatsu K. (2019), *Interview*, Linguistic Society of America March 2019 Member Spotlight:
<https://www.linguisticsociety.org/content/march-2019-member-spotlight-kazuko-hiramatsu>.
- Holland N. E., Farmer-Hinton R. L. (2009), “Leave no schools behind: The importance of a college culture in urban public high schools”, in *The High School Journal*, XCII, 3, pp. 24-43.
- Jakobson R. (1941), *Kindersprache, Aphasie und allgemeine Lautgesetze*, Almqvist & Wiksell, Uppsala.
- Kaplan R. M., Pascoe G. C. (1977), “Humorous lectures and humorous examples: Some effects upon comprehension and retention”, in *Journal of Educational Psychology*, LXIX, 1, pp. 61-65.
- Kavitskaya D. (2018), “On Russian Pokémonastics”, slides presented at the *First Conference on Pokémonastics*:
<https://1stpokemonastics.files.wordpress.com/2018/05/kavitskayarussianpokemon.pdf>.
- Kawahara S. (2013a), “The phonetics of Japanese maid voice I: A preliminary study”, in *音韻研究* [Phonological Studies], XVI, pp. 19-28.
- Kawahara S. (2013b), “メイド文化と音声学” [Maid culture and phonetics], in Takatora (ed.), *メイドカフェ批評* [Maid cafés: a review], pp. 112-121.
- Kawahara S. (2015), *音とことばのふしぎな世界* [The mysterious world of sounds and words], Iwanami Shoten, Tokyo.
- Kawahara S. (2016), “The prosodic features of the “moe” and “tsun” voices”, in *Journal of the Phonetic Society of Japan*, XX, 2, pp. 102-110.
- Kawahara S. (2017a), “音そのものに意味はあるのか—ポケモンから考える「音とことばのふしぎな世界」” [Does the sound itself have a meaning? “The mysterious world of sounds and words” from Pokémon’s perspective], in *Wired JP*, 02/03/2017: <https://wired.jp/2017/03/02/pokemon-sound/>.

- Kawahara S. (2017b), “Sound Symbolic Patterns in the Spell Names of Dragon Quest: Teaching Phonetics with Sound Symbolism”, in *Journal of the Phonetic Society of Japan*, XXI, 2, pp. 38-42.
- Kawahara S. (2017c), “「あ」は「い」より大きい!?—音象徴で学ぶ音声学入門 ” [“A” is bigger than “I”!? An introduction to phonetics through sound symbolism], Hitsuji, Tokyo.
- Kawahara S. (2018), “Teaching phonetics through sound symbolism”, in *Proceedings of the International Symposium on Applied Phonetics (ISAPh)*, pp. 19-26.
- Kawahara S. (2019), “What’s in a PreCure name?”, in *International Christian University Working Papers in Linguistics*, VII, pp. 15-22.
- Kawahara S. (2020a), “Sound symbolism and theoretical phonology”, in *Language and Linguistic Compass*, XIV, 8, pp. 1-17.
- Kawahara S. (2020b), “Teaching and learning guide for “Sound symbolism and theoretical linguistics”, in *Language and Linguistic Compass*, XIV, 8:
<https://doi.org/10.1111/lnc3.12376>.
- Kawahara S. (2021), *How Pokémonastics has evolved: Ver 1.1*, Unpublished manuscript:
https://ling.auf.net/lingbuzz/005843/current.pdf?_s=6z7vRGjzT5e01k24.
- Kawahara S., Breiss C. (2021), “Exploring the nature of cumulativity in sound symbolism: Experimental studies of Pokémonastics with English speakers”, in *Laboratory Phonology*, XII, 1, pp. 1-29.
- Kawahara S., Godoy M. C., Kumagai G. (2020), “Do sibilants fly? Evidence from a sound symbolic pattern in Pokémon names”, in *Open Linguistics*, VI, 1, pp. 386-400.
- Kawahara S., Isobe M., Kobayashi Y., Monou T., Okabe R. (2018), “Acquisition of Sound Symbolic Values of Vowels and Voiced Obstruents by Japanese Children: Using a Pokémonastics Paradigm”, in *Journal of the Phonetic Society of Japan*, XXII, 2, pp. 122-130.
- Kawahara S., Katsuda H., Kumagai G. (2019), “Accounting for the stochastic nature of sound symbolism using Maximum Entropy model”, in *Open Linguistics*, V, pp. 109-120.
- Kawahara S., Kumagai G. (2019a), “Inferring Pokémon types using sound symbolism: The effects of voicing and labiality”, in *Journal of Phonetic Society of Japan*, XXIII, 2, pp. 111-116.
- Kawahara S., Kumagai G. (2019b), “Expressing Evolution in Pokémon Names: Experimental Explorations”, in *Journal of Japanese Linguistics*, XXXV, 1, pp. 3-38.
- Kawahara S., Kumagai G. (2021), “What voiced obstruents symbolically represent in Japanese: Evidence from the Pokémon universe”, in *Journal of Japanese Linguistics*, XXXVII, 1, pp. 3-24
- Kawahara S., Monou T. (2017), “Using Sound Symbolism in Introductory Classes: Sound Symbolism in Monster Names in Ultraman Series”, in *Journal of the Phonetic Society of Japan*, XXI, 2, pp. 43-49.
- Kawahara S., Monou T. (2018), “音象徴で言語学を教える: 具体的成果の紹介を通し” [Teaching linguistics through sound symbolism: introducing concrete results], in *Southern Review*, XXXII, pp. 3-14.
- Kawahara S., Monou T. (2019), *Using sound symbolic patterns in Pokémon names in phonetics education*, unpublished manuscript:
<http://user.keio.ac.jp/~kawahara/pdf/PokemonTeaching.pdf>.
- Kawahara S., Moore J. (2021), “How to express evolution in English Pokémon names”, in *Linguistics*, LIX, 3, pp. 577-607.
- Kawahara S., Noto A., Kumagai G. (2016), “Sound (Symbolic) Patterns in Pokémon Names: Focusing on Voiced Obstruents and Mora Counts”, *PLoS One* preprint:
https://ling.auf.net/lingbuzz/003196/v1.pdf?_s=veKAAUSVbjS2c_CI.

- Kawahara S., Noto A., Kumagai G. (2018), “Sound symbolic patterns in Pokémon names”, in *Phonetica*, LXXV, 3, pp. 219-244.
- Kawahara S., Suzuki M., Kumagai G. (2020), “Sound symbolic patterns in Pokémon move names”, in *International Christian University Working Papers in Linguistics*, X, pp. 17-30.
- Kumagai K., Kawahara S. (2017a). “ポケモンのネーミングにおける母音と有声阻害音の効果” [Effects of vowels and voiced plosives on Pokémon naming], in *Proceedings of the 155th Annual Meeting of the Linguistic Society of Japan*, pp. 127-132.
- Kumagai K., Kawahara S. (2017b), “音象徴の抽象性：赤ちゃん用オムツのネーミングにおける唇音” [The abstractness of sound symbolism: Labiality in diaper names], in *Proceedings of the 31st Annual Meeting of the Phonetic Society of Japan*, pp. 49-54.
- Kumagai K., Yoshitake K., Tanji H., Matsushashi T. (2020), “Sound-symbolic effects of voiced obstruents and mora counts on the monster names of Digital Monster and Monster Hunter, and on the spell names of Final Fantasy”, in *Journal of the Phonetic Society of Japan*, XXIV, 2, pp. 63-70.
- Köhler W. (1929), *Gestalt Psychology*, Liveright, New York.
- Labov W. (1990), “The intersection of sex and social class in the course of linguistic change”, in *Language Variation and Change*, II, 2, 205-254.
- Lesage E., Valcke M., Sabbe E. (2013), “Scoring methods for multiple choice assessment in higher education – Is it still a matter of number right scoring or negative marking?”, in *Studies in Educational Evaluation*, XXXIX, 3, pp. 188-193.
- Louwerse M., Qu Z. (2017), “Estimating valence from the sound of a word: Computational, experimental, and cross-linguistic evidence”, in *Psychonomic Bulletin & Review*, XXIV, 3, pp. 849-855.
- Lukavsky J., Butler S., Harden A. J. (1995), “Perception of an instructor: dress and students’ characteristics”, in *Perceptual and Motor Skills*, LXXXI, 1, pp. 231-240.
- Mackenzie L. (2018), “What’s in a name? Teaching linguistics using onomastic data”, in *Language*, XCIV, 4, pp. 293-310.
- Mallinson C., Charity Hudley A. H. (2018), “Balancing the communication equation: An outreach and engagement model for using sociolinguistics to enhance culturally and linguistically sustaining K–12 STEM education”, in *Language*, XCIV, 3, pp. 191-215.
- Mayer R. E. (2002), “Cognitive theory and the design of multimedia instruction: An example of the two-way street between cognition and instruction”, in *New Directions in Teaching and Learning*, LXXXIX, pp. 55-71.
- McCarvel M., Bakos J., Bunger A., Clements G., Eggington W., Launspach S., Temkin Martinez M., Motut A., Rushforth M. (2018), *Innovative Pedagogy in the Linguistics Classroom. A mini-course proposal for those interested in learning about evidence-based instructional practices in the linguistics classroom*, 92nd Annual Meeting of the Linguistic Society of America:
https://www.linguisticsociety.org/sites/default/files/LSA_Mini_Course_Proposal_LiHEC.pdf.
- McGee E. O., Thakore B. K., LaBlance S. S. (2017), “The Burden of Being “Model”: Racialized Experiences of Asian STEM College Students”, in *Journal of Diversity in Higher Education*, X, 3, pp. 253-270.
- McKinney K. (2004), “The Scholarship of Teaching and Learning: Past Lessons, Current Challenges, and Future Visions”, in *To Improve the Academy*, XXII, 1, pp. 3-19.
- Moreno R., Mayer R. E. (2000), “Engaging students in active learning: The case for personalized multimedia messages”, in *Journal of educational psychology*, XCII, 4, pp. 724-733.
- Moretti G., Giuliani A., Morini A. (2018), “Increase students’ awareness as trainee subjects: use and validation of the Motivated Strategies for Learning Questionnaire in Italy”, in *Italian Journal of Educational Research*, XXI, pp. 1-18.

- Nobile L., Lombardi Vallauri E. (2016), *Onomatopea e fonosimbolismo*, Carocci, Roma.
- Nodari R. (2015), “Descrizione acustica delle occlusive sorde aspirate: analisi sociofonetica dell’italiano regionale di adolescenti calabresi”, in Vayra M., Avesani C., Tamburini F. (eds.), *Il farsi e disfarsi del linguaggio. Acquisizione, mutamento e destrutturazione della struttura sonora del linguaggio*. Studi AISV 1, Officinaventuno, Milano, pp. 139-153.
- Ohala J. J. (1984), “An ethological perspective on common cross-language utilization of F0 of voice”, in *Phonetica*, XLI, pp. 1-16.
- Pallas A. M. (1993), “Schooling in the Course of Human Lives: The Social Context of Education and the Transition to Adulthood in Industrial Society”, in *Review of Educational Research*, LXIII, 4, pp. 409-447.
- Pate A., Caldwell D. J. (2014), “Effects of multiple-choice item-writing guideline utilization on item and student performance”, in *Currents in Pharmacy Teaching and Learning*, VI, 1, pp. 130-134.
- Perfors A. (2004), “What’s in a name? The effect of sound symbolism on perception of facial attractiveness”, in *Proceedings of the Annual Meeting of the Cognitive Science Society*, XXVI, p. 1617.
- Piccardi D. (2017a), “La vita sociale del fonosimbolismo: un’analisi del rapporto tra significato indessicale e significato referenziale”, in *Codisco X Abstracts*, Corisco Edizioni, Roma-Messina, pp. 94-96.
- Piccardi D. (2017b), “Sociophonetic factors of speakers’ sex differences in Voice Onset Time: A Florentine case study”, in Bertini C., Celata C., Lenoci G., Meluzzi C., Ricci I. (eds.), *Fattori sociali e biologici nella variazione fonetica*. Studi AISV 3, Officinaventuno, Milano, pp. 83-106.
- Pintrich P. R., De Groot E. V. (1990), “Motivational and self-regulated learning components of classroom academic performance”, in *Journal of Educational Psychology*, LXXXII, 1, pp. 33-40.
- Pintrich P. R., Smith D. A. F., García T., McKeachie W. J. (1991), *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)* (Report No. 91-B-004), Ann Arbor, The University of Michigan:
<https://files.eric.ed.gov/fulltext/ED338122.pdf>.
- Plonsky L. (2015, ed.), *Advancing quantitative methods in second language research*, Routledge, New York/Abingdon.
- Poole G. (2013), “Square One: What Is Research?”, in McKinney K. (ed.), *The scholarship of teaching and learning in and across disciplines*, Indiana University Press, Bloomington-Indianapolis, pp. 135-151.
- R Core Team (2022), *R: A language and environment for statistical computing*, R Foundation for Statistical Computing, Vienna: <https://www.R-project.org/>.
- Ramachandran V. S., Hubbard E. M. (2001), “Synaesthesia – A window into perception, thought, and language”, in *Journal of Consciousness Studies*, VIII, 12, pp. 3-34.
- Ramachandran V. S., Oberman L. M. (2006), “Broken mirrors: a theory of autism”, in *Scientific American*, CCXCV, 5, pp. 62-69.
- Rey G. D., Steib N. (2013), “The personalization effect in multimedia learning: The influence of dialect”, in *Computers in Human Behavior*, XXIX, 5, pp. 2022-2028.
- Roach K. D. (1997), “Effects of Graduate Teaching Assistant Attire on Student Learning, Misbehaviors, and Ratings of Instruction”, in *Communication Quarterly*, XLV, 3, pp. 125-141.
- Sapir E. (1929), “A Study in Phonetic Symbolism”, in *Journal of Experimental Psychology*, XII, 3, pp. 225-239.
- Saussure F. de (1916), *Cours de linguistique générale*, Payot, Lausanne.

- Shih S., Ackerman J., Hermalin N., Inkelas S., Jang H., Johnson J., Kavitskaya D., Kawahara S., Oh M., Starr R. L., Yu A. (2019, submitted), *Cross-linguistic and language-specific sound symbolism: Pokémonastics*:
<http://user.keio.ac.jp/~kawahara/pdf/PokemonasticsShihEtAl.pdf>.
- Shih S., Ackerman J., Hermalin N., Inkelas S., Kavitskaya D. (2018), “Pokémonikers: A study of sound symbolism and Pokémon names”, in *Proceedings of the Linguistic Society of America*, III, pp. 1-6.
- Shinohara K., Kawahara S. (2013), “The sound symbolic nature of Japanese maid names”, in *The proceedings of JCLA (Japan Cognitive Linguistics Association) 13*, pp. 183-193.
- Shinohara K., Yamauchi N., Kawahara S., Tanaka H (2016), “Takete and Maluma in Action: A Cross-Modal Relationship between Gestures and Sounds”, in *PLoS ONE*, XI, 9, pp. 1-17.
- Starr R., Yu A., Shih S. (2018), “Sound symbolic effects in Mandarin and Cantonese personal names and Pokémon names”, slides presented at the *First Conference on Pokémonastics*:
<https://1stpokemonastics.files.wordpress.com/2018/05/chinese-pokemon-personal-names-keio-may-2018-2.pdf>.
- Styles S. J., Gawne L. (2017), “When Does Maluma/Takete Fail? Two Key Failures and a Meta-Analysis Suggest That Phonology and Phonotactics Matter”, in *i-Perception*, VIII, 4, pp. 1-17.
- Thomson P., Hall C. (2016), *Place-Based Methods for Researching Schools*, Bloomsbury, London.
- Vanderoost J., Janssen R., Eggermont J., Callens R., De Laet T. (2018), “Elimination testing with adapted scoring reduces guessing and anxiety in multiple-choice assessments, but does not increase grade average in comparison with negative marking”, in *PLoS ONE*, XIII, 10, pp. 1-27.
- Wolfram W. (1993), “Ethical considerations in language awareness programs”, in *Issues in Applied Linguistics*, IV, 2, pp. 225-255.
- Wu L., Klink R. R., Guo J. (2013), “Creating Gender Brand Personality with Brand Names: The Effects of Phonetic Symbolism”, in *Journal of Marketing Theory and Practice*, XXI, 3, pp. 319-330.
- Zuraw K., Aly A. M., Lin I., Royer A. J. (2019), “Gotta catch ’em all: Skills grading in undergraduate linguistics”, in *Language*, XCV, 4, pp. 406-427.

Appendix A. ITALIAN MSLQ

List of the Italian-translated 44 items of the MSLQ used in this study. The items are presented here in the same order and with the same labels of Pintrich, De Groot (1990). See *ibid.* for the original English items. Students were asked to answer on a 7-point Likert scale (1 = “non mi rispecchia affatto”; 7 = “mi rispecchia completamente”).

A. Self-Efficacy

2. Mi aspetto di fare bene rispetto agli altri studenti della mia classe.
7. Sono sicuro di poter capire le idee insegnate in classe.
10. Mi aspetto di fare molto bene in questa classe.
11. Penso di essere un buono studente rispetto agli altri della mia classe.
13. Sono sicuro di poter svolgere un ottimo lavoro sui problemi e i compiti che mi vengono assegnati in classe.

15. Penso che riceverò buoni voti in questa classe.
20. Le mie capacità di studio sono migliori rispetto agli altri della classe.
22. Rispetto agli altri studenti della classe credo di sapere molto sugli argomenti trattati.
23. So che sarò capace di imparare a utilizzare i materiali che ci vengono forniti in classe.

B. *Intrinsic Value*

1. Preferisco argomenti di studio impegnativi, in modo da imparare cose nuove.
5. È importante per me imparare ciò che viene insegnato in questa classe.
6. Mi piace ciò che sto imparando in questa classe.
9. So che sarò capace di utilizzare in altre occasioni ciò che apprendo in classe.
12. Se ho la possibilità di scegliere tra compiti diversi, scelgo spesso quelli più impegnativi perché possono farmi imparare qualcosa di più.
17. Quando faccio male una verifica cerco di imparare dai miei errori.
18. Penso che ciò che sto imparando in questa classe sia utile da sapere.
21. Penso che ciò che stiamo imparando in questa classe sia interessante.
25. Capire le materie è importante per me.

C. *Test Anxiety*

3. Sono così nervoso durante le verifiche che non riesco a ricordarmi nozioni che avevo imparato.
14. Quando faccio una verifica mi sento a disagio e agitato.
24. Mi preoccupo molto per le verifiche.
27. Mentre faccio una verifica mi viene da pensare che la sto facendo male.

D. *Cognitive Strategy Use*

30. Quando studio per una verifica, cerco di mettere insieme le informazioni date in classe e quelle che leggo nei libri di testo.
31. Quando faccio i compiti a casa, per farli bene provo a ricordarmi ciò che l'insegnante ha detto in classe.
33. [Reversed] È difficile per me stabilire quali siano le idee principali in ciò che sto leggendo.
35. Quando studio cerco di riformulare le idee importanti a parole mie.
36. Cerco sempre di capire ciò che l'insegnante sta dicendo anche se non mi sembra che abbia senso.
38. Quando studio per una verifica cerco di ricordarmi più informazioni possibili.
39. Quando studio ricopio i miei appunti per aiutarmi a ricordare gli argomenti.
42. Quando studio per una verifica mi esercito ripetendo più volte tra me e me le informazioni importanti.
44. Faccio uso di ciò che ho imparato dai vecchi compiti a casa e dai libri di testo per fare i nuovi compiti.
47. Quando studio una materia, cerco di far quadrare tutto.

53. Quando leggo gli argomenti assegnatimi in classe, mi ripeto più e più volte le parole lette per aiutarmi a ricordarle.
54. Sottolineo i capitoli dei libri per aiutarmi a studiare.
56. Mentre leggo cerco di collegare le cose che sto leggendo a ciò che so già.

E. *Self-Regulation*

32. Mi faccio domande da solo per essere sicuro di sapere ciò che ho studiato.
34. [Reversed] Quando il lavoro scolastico si fa duro lascio perdere o studio soltanto le parti più semplici.
40. Faccio esercizi di pratica (ad es., quelli contenuti alla fine dei capitoli dei libri) anche se non mi viene richiesto.
41. Anche se i materiali di studio sono noiosi e poco interessanti, continuo a lavorare finché non finisco.
43. Prima di iniziare a studiare penso alle cose che dovrò fare per apprendere i concetti.
45. [Reversed] Mi trovo spesso nella situazione di aver letto qualcosa per le lezioni, ma di non sapere poi di cosa si tratti.
46. [Reversed] Mentre l'insegnante parla, mi trovo a pensare ad altre cose e a non ascoltare ciò che viene detto.
52. Mentre leggo mi fermo ogni tanto e ripercorro ciò che ho letto fino a quel momento.
55. Lavoro sodo per prendere buoni voti anche se una materia non mi piace.

Appendix B. CONTENT OF THE SLIDES

Table containing a full list of media materials which were selected for the two slideshows. The presentations shared the same red and white Atlas template, bottom-top between-slide push transitions, and fade animations. The materials are listed in the original sequence order.

Slide number	Topic	Materials (Standard)	Materials (Pokémon)
1	Introduction	University and school logos	University and school logos
2	Performing a maluma-takete experiment	The original maluma-takete drawings from Köhler (1929)	The original maluma-takete drawings from Köhler (1929)
3	Performing a maluma-takete experiment with living creatures	Berlin (2006) drawings of the <i>Aramides cajanea</i> and the <i>Tinamous major</i>	Kawahara, Kumagai (2019b) drawings of two flying pseudo-Pokémon (round vs. angular)
4	Performing a maluma-takete with movements	Two short clips from the supplementary materials of Shinohara, Yamauchi, Kawahara, Tanaka (2016)	Two short clips of the trainer gestures preceding Pokémon special moves (water = wavy; ice = spikey)

5	Performing a mal-mil experiment	Two pictures of the same wooden table, one of which was reduced to ¼ of the original size	Two pictures of the same wooden table, one of which was reduced to ¼ of the original size
6	Performing a frequency code experiment (big/small)	Two short audio clips of a white lion cub and an adult white lion (pictures provided after the students' responses)	Two short audio clips of a pre- and post-evolution Pokémon from the original 1996 games (pictures provided after the students' responses)
7	Performing a frequency code experiment (aggressive/submissive)	Two short audio clips of a cat fighting and asking for attention (pictures provided after the students' responses)	Two short audio clips of a Pokémon fighting and enjoying its bottle of ketchup (pictures provided after the students' responses)
8	Explaining the arbitrariness of the linguistic sign	A picture of Saussure; the frontpage of the <i>Cours de Linguistique Générale</i> ; the arbor representation	A picture of Saussure; the frontpage of the <i>Cours de Linguistique Générale</i> ; a Pokémon surrounded by its name differently localized across the world's languages
9	Explaining the maluma-takete and mal-mil experiments	A picture of Köhler; the maluma-takete stimuli; Sapir; the mal-mil stimuli	A picture of Köhler; the maluma-takete stimuli; Sapir; the mal-mil stimuli
10	Explaining the cognitive boundaries of sound-symbolism	The frontpage of Gold, Segal (2017); a picture of a boy in front of a broken mirror (Ramachandran, Oberman 2006); the frontpage of Drijvers, Zaadnoordijk, Dingemanse (2015)	The frontpage of Gold, Segal (2017); a picture of a boy in front of a broken mirror (Ramachandran, Oberman 2006); the frontpage of Drijvers, Zaadnoordijk, Dingemanse (2015)
11	Explaining the cultural and linguistic boundaries of sound-symbolism	The frontpage of Bremner et al. (2013); a picture of Himba people; the frontpage of Styles, Gawne (2017); the picture of the Syuba people completing the task from the same paper	The frontpage of Bremner et al. (2013); a picture of Himba people; the frontpage of Styles, Gawne (2017); the picture of the Syuba people completing the task from the same paper
12	Explaining the concepts of low and high frequency sounds	A picture of J.J. Ohala; a short video clip of a violin player playing Beethoven's <i>An die Freude</i> ; a short video clip of a cello player playing the same tune; the white lion pictures from slide n. 6	A picture of J.J. Ohala; a short video clip of a violin player playing Beethoven's <i>An die Freude</i> ; a short video clip of a cello player playing the same tune; the Pokémon pictures from slide n. 6

13	Explaining the frequency code through an infographic of its evolutionary process	A picture of the vocal cords; closed/open glottis; an adult white lion; a man escaping from an adult lion; male/female vocal tract; high/low frequency waveforms; a man showing aggressive behavior; the mal-mil tables; the march of progress	A picture of the vocal cords; closed/open glottis; a post-evolution Pokémon; Pokémon human characters escaping from the aforementioned creature; male/female vocal tract; a waveform from a vintage videogame console audio system; a cartoon character showing aggressive behavior; the mal-mil tables; the march of progress with a videogame twist
14	Explaining synesthesia	Ramachandran, Hubbard (2001) frontpage; two pictures of brains from the paper	Ramachandran, Hubbard (2001) frontpage; two pictures of brains from the paper
15	Providing “applied” examples of sound-symbolic associations	Perfors (2004) frontpage; a hotornot screenshot; a chart of Perfors’ results; Wu, Klink, Guo (2013) frontpage; pictures of the goods discussed in the paper; a chart of the paper results	The frontpage of Shinohara, Kawahara (2013); the maid drawings from Kawahara’s (2017c) book cover; a chart showing the stimuli and results of Shinohara, Kawahara (2013); Kawahara, Kumagai (2019b) frontpage; two couples of pseudo-Pokémon drawings from the study; a chart of the paper results
16	Explaining sound-symbolism from its cognitive/evolutionary to its cultural reinterpretations	A textual infographic, whose components were read out loud	A textual infographic, whose components were read out loud
17	Exemplifying cultural dissimilarities in sound symbolism	Guillamón (2013) frontpage; an IPA vowel chart; the normalized foci color chart from Berlin, Kay (1969); Louwerse, Qu (2017) frontpage; a chart of its results.	The front slide of Starr, Yu, Shih (2018) materials for the 1 st Pokémonastics conference; a picture of Hong Kong protesters for Pokémon name changes; a comparative tone chart of the Mandarin and Cantonese systems; the front slide of Kavitskaya (2018)’s materials for the 1 st Pokémonastics conference; a pair of Pokémon with their English and Russian names; a chart with the results of the study

18	Explaining identity in sociolinguistics	A sex/gender explanatory chart; a picture of a group of young American friends belonging to different subcultures; the front cover of Eckert (1989); a picture of Labov; three textual excerpts of Labov's (1990) principle 1, 1a and 2	A sex/gender explanatory chart; a picture of a moe and a tsun maid; the frontpage of Kawahara (2016); a picture of Labov; three textual excerpts of Labov's (1990) principle 1, 1a and 2
19	Explaining subsegmental cues and the results of Piccardi (2017b)	A picture of Florence; two anonymous excerpts of the same sentence uttered by a Florentine middle-aged man and young woman; two pictures describing their identity; two spectrograms focusing on short and long-lag plosive releases	A picture of Florence; two anonymous excerpts of the same sentence uttered by a Florentine middle-aged man and young woman; two pictures describing their identity; two spectrograms focusing on short and long-lag plosive releases
20	Explaining the work hypothesis of Piccardi (2017a)	The white lion pictures; the wooden table pictures; the short/long-lag aspiration spectrograms; black silhouettes of a bull and a cow	The pre/post evolution Pokémon pictures; the wooden table pictures; the short/long-lag aspiration spectrograms; black silhouettes of a bull and a cow
21	Conclusion	My phone number/email address	My phone number/email address

Appendix C. ASSESSMENT QUESTIONNAIRE

Welcome to this short test! Put a cross at what you think is the correct answer. Only one answer per question is correct. One point is awarded for each correct answer and 0.75 points are deducted from the final score for each wrong answer; leaving an answer blank does not affect your final score. These rules do not apply to the last seven questions: please try to answer all the questions in that section! You have approximately 30 minutes to complete this test. Have fun!

1. Given the theories on sound symbolism, how would you name a balloon?
 - a. Takete
 - b. Maluma
 - c. Matele

2. Given the theories on sound symbolism, how would you name the movement of a caressing hand?
 - a. Bouba
 - b. Kibou
 - c. Kiki

3. Given the theories on sound symbolism, how would you name a giant?
 - a. Mel
 - b. Mil
 - c. Mal

4. Given the theories on sound symbolism, with respect to the voice of a pleased professor, how would you describe the voice of an angry professor?
 - a. Lower
 - b. More intense
 - c. More modulated

5. The linguistic sign is arbitrary, since...
 - a. There is no logical connection to its referent
 - b. There is no logical connection to its components
 - c. There is no logical connection to its utterer

6. In a world where the same object is named “porta” in Italian and “door” in English, language iconicity does exist. Thus...
 - a. The arbitrariness of the linguistic sign is confuted
 - b. The arbitrariness of the linguistic sign is confirmed
 - c. The arbitrariness of the linguistic sign is relativized

7. A person cannot express sound-symbolic associations if...
 - a. He/she has auditory or linguistic problems
 - b. He/she has auditory or vision problems
 - c. He/she has relational or linguistic problems

8. The Suri people live on a plateau between South Sudan and Ethiopia. Their settlements are far from any modern town. Their language relies on words consisting of consonant-vowel sequences. In this specific context, a maluma-takete experiment would probably...
 - a. Succeed, at least with respect to the core symbolic associations
 - b. Fail
 - c. Succeed, as if it had been run in Italy

9. The Arrernte people live on the borders of the central Australian Simpson desert. Their language does not allow for words beginning with consonants. In this specific context, a maluma-takete experiment would probably...
 - a. Succeed, at least with respect to the core symbolic associations
 - b. Fail
 - c. Succeed, as it had been run in Italy

10. Ohala labelled his frequency code theory as “ethological”, since...
 - a. It explains human semiotics through animal semiotics
 - b. It explains animal semiotics through human semiotics
 - c. It explains human semiotics through animal anatomy

11. A man goes on a beach vacation. At some point, a siren at the harbor was briefly turned on. Our man has a sudden feeling of anguish and danger. Indeed, he...
 - a. Usually lives near a mall where lottery winners are announced every day through a siren
 - b. Had once heard about a dramatic accident which took place in a harbor
 - c. Usually lives near the ER, where ambulance sirens can often be heard
12. Given the frequency code theory, men's voices became lower than women's because this made them...
 - a. Seem more aggressive
 - b. Have better chances of reproduction
 - c. Seem bigger
13. If someone asks me about the taste of a chocolate which I had eaten, and I answer with "a well-rounded flavor", then my brain...
 - a. Is making connections between the areas of taste and vision, which in turn are transferring information to the right hemisphere
 - b. Is making synesthetic connections between the motor, visual and auditory domains
 - c. Is making connections between the areas of taste and vision, which in turn are transferring information to the left hemisphere
14. In Japan, masculine given names are statistically longer than feminine ones. In the absence of historical explanations, we may suppose that this naming pattern was conceived following...
 - a. Associations with stereotypical features of masculinity (strength < name length)
 - b. Sound-symbolic principles concerning the frequency code
 - c. Aesthetic preferences for specific sound sequences
15. A new brand of beauty products for women is searching for a suitable name. You propose a name including the following sounds:
 - a. i l m s
 - b. o t p g
 - c. u v f k
16. A researcher asks participants from disparate regions of the world to propose associations between sounds and political leanings (e.g., conservative, progressive etc.). He expects...
 - a. Uneven answers, for cognitive reasons
 - b. Homogeneous answers
 - c. Uneven answers, for sociocultural reasons
17. In social sciences, "bricolage" stands for the making of an individual's identity. Indeed, we believe that identity is composed of:
 - a. Linguistic features which arrange other features (behavioral, aesthetic etc.), creating something unique
 - b. Many heterogeneous features (i.e., linguistic, behavioral, aesthetic etc.) which are arranged by the individual
 - c. Behavioral and aesthetic features which arrange linguistic features, creating something unique

18. Given the sociolinguistic findings on expectation, you may suppose that the speech of mothers directed to their children features...
- No differences between the speeches directed to their sons and daughters
 - More dialect elements in the speeches directed to their sons
 - More dialect elements in the speeches directed to their daughters
19. In some English varieties, [t] can be pronounced as a “weak” variant, which contrasts with the standard “strong” variant. The weak variant is considered very informal and can be heavily stigmatized. In this context, a man who exaggerates the “strength” of his [t]s will be generally considered:
- Rude
 - Learned
 - Fussy
20. A recent research set in the San Francisco Bay Area brought up a peculiar variant of /l/ uttered by adolescent subgroups. This variant is used to index a rough, introvert, cool behavior. You want to test for potential sound symbolic associations stemming from this peculiar /l/. Therefore, you gather together some local adolescent participants and...
- You let them listen to some pseudowords with and without the specific variant. Then, you ask them whether the words were uttered by a rough or by a pure, innocent movie character
 - You let them listen to some spontaneous speech excerpts with and without the specific variant. Then, you ask them whether the words were uttered by a rough or by a pure, innocent movie character
 - You let them listen to some pseudowords with and without the specific variant. Then, you ask them whether the words were invented in order to name a rough or a pure, innocent movie character
- I. “Pokémon” stands for:
- Pocket Monsters
 - Collectable Monsters
 - Breedable Monsters
- II. In the international version of the cartoon, the human protagonist is named:
- Brock
 - Gary
 - Ash
- III. The first Pokémon videogames which were released in Italy were:
- Red and Blue
 - Red and Green
 - Red and Yellow
- IV. Pokémon is released on the consoles of which company?
- Sony
 - Nintendo
 - Microsoft

- V. How many Pokémon generations have been published?
- Six
 - Seven
 - Eight
- VI. In the Japanese version of the cartoon, the human protagonist is named:
- Satoshi
 - Shigeru
 - Takeshi
- VII. “Pokémon VGC” is...
- A smartphone game
 - A card game
 - An e-sport