

KATARZYNA ROGALSKA-CHODECKA

Nicolaus Copernicus University in Toruń, Poland

<https://orcid.org/0000-0001-8808-9326>

Copyright and License: Copyright by Instytut Języka Polskiego PAN, Kraków 2021. This article is published under the terms of the Creative Commons Attribution – NoDerivatives 4.0 International (CC BY-ND 4.0) License (<https://creativecommons.org/licenses/by-nd/4.0/legalcode.pl>).

***LINGUA FRANCA* FEATURES IN ITALIAN. EVIDENCE FROM AN EVOLUTIONARY LINGUISTICS EXPERIMENT**

Keywords: *lingua franca*, English, Italian, iterated learning, evolutionary linguistics.

ABSTRACT

There is no doubt about the *lingua franca* status of the English language (e.g. Mair 2003). It even manifested itself in an evolutionary linguistics study based on the methodology of iterated learning (cf. Kirby and Hurford 2002). In an experiment with human participants, all of whom were native speakers of Polish, aimed at producing basic yet novel linguistic systems, entrenched linguistic structures related to English could easily be found, despite the fact that the experiment's participants were asked not to use linguistic units from existing languages (e.g. Rogalska-Chodecka 2015). When the experiment's participants tried to notice a lexical or syntactic pattern in a set of CVCVCV strings, they referred to English words regardless of their level of language knowledge or the experimenter's instruction. Consequently, the final product of the experiment was not a novel linguistic system, but one containing entrenched linguistic English-related structures, which proves that in the absence of known linguistic structures, referring to English ones seems to be the easiest option.

The present article asks whether it is possible to “force” participants in an experiment to use certain items from the Italian lexicon (related to colour, number, and shape) instead of those that come from English, despite their declared lack of knowledge of the Italian language. The results of two studies, one with a control group where the participants were asked to learn words in English as well as random CVCVCV strings, and one “contaminated” with Italian, where random words were exchanged with Italian ones, are compared in order to determine whether Italian is as useful as English from the perspective of participants in experiments and possesses *lingua franca* features that can be noticed in the case of the original evolutionary experiment. It turned out that, due to its high learnability, Italian exhibits *lingua franca* features and, given similar historical conditions to English, could regain its historical *lingua franca* status.

INTRODUCTION

In today's world, the very notion of *lingua franca* is always associated with the English language. It seems inconceivable for a person communicating with people from all over the world to use a language other than English in the absence of knowledge of their

native language (Firth 1996, 240). It becomes more and more natural to use English in communicative situations even when it is not necessary. People tend to introduce English loanwords, both in the formal and informal registers, when they could easily be substituted with words in their native language (e.g. Paradowski 2013, 318). Consequently, it can be stated that the status of English as a *lingua franca* is indisputable. However, it should be noted that it was not always like this.

What nowadays seems to be obvious would be rather surprising before the domination of the British Empire; however, the status of English as a *lingua franca* only started to be thoroughly studied by scholars in the second half of the 20th century (Brosch 2015, 75–76). What is more, it should be stated that before English other languages also enjoyed the status of *lingua franca*. From the historical perspective, one of the strongest ones, as well as the one from which the very term *lingua franca* comes, was Italian (Brosch 2015, 72). According to the Oxford dictionary, *lingua franca* can be defined as “a language that is adopted as a common language between speakers whose native languages are different”. Even though nowadays the term refers only to English, its origins date back to the late 17th century, and could be literally translated from Italian as “Frankish tongue”. As further explained in the dictionary, it referred to “a mixture of Italian with French, Greek, Arabic, and Spanish, formerly used in the eastern Mediterranean”. Despite the fact that it included elements from other languages, the strength of the impact of Italian on the language used mainly in commerce from medieval times is irrefutable (Adler 1977, 12).

Consequently, if Italian used to be such a powerful language, the question emerges: could it still be used as a *lingua franca* nowadays? In order to answer it, it would probably be necessary to impose it on a group of people and wait for several decades to see whether it was accepted and “disseminated”. As such a study seems to be impossible to carry out, it might be useful to refer to the methodology of iterated learning, which allows for omitting the time-related obstacle, commonly utilised in evolutionary linguistics and discussed further in the article. In the course of the study, two iterated learning experiments based on the “alien fruit” model were conducted. In the first one, English words were presented to the participants in the background of randomly generated CVCVCV strings. The task of the participants was to memorise them (both English and random words), and the experimenter’s aim was to see whether the learnability of English words would in fact be higher than in the case of meaningless words, which would in a way confirm the *lingua franca* status of the English language. On the other hand, in the second experiment random words were substituted with Italian ones and presented to a group of subjects declaring no knowledge of the Italian language. Here, the aim was to see whether the learnability of words in the current *lingua franca* would be higher than in the case of words from the historical *lingua franca*. Following the author’s hypothesis, it should be so, considering that English is commonly used nowadays; therefore, the participants should have less difficulty learning English words than Italian ones. However, if the learnability of Italian words is similar or greater than the learnability of English ones, it could be suggested that, given appropriate historical

conditions, Italian could still be a *lingua franca* nowadays, or that the high learnability of English is by no means the reason for its *lingua franca* status. Consequently, it is worth paying attention to the features of English as a *lingua franca* and the author's interest in the language's learnability, which will be done in the following section.

FEATURES OF ENGLISH AS A LINGUA FRANCA

As the present article aims to consider the possibility of using Italian as a *lingua franca*, the features of a *lingua franca* to be verified during the experiments should be listed at this point. However, the only *lingua franca* studied in detail nowadays is the current *lingua franca*, namely English. Therefore, the present section of the article will briefly present its main features, which contribute to its *lingua franca* status.

Among the most prominent scholars studying English as a *lingua franca* (hereinafter, ELF) is Barbara Seidlhofer. In her 2004 article, she enumerates the following features of ELF:

- 'Dropping' the third person present tense -s e.g. 'he take' instead of 'he takes';
- 'Confusing' the relative pronouns *who* and *which*;
- 'Leaving out' words like 'a' and 'the' where they are obligatory for native speakers of English, and using them where they do not occur in a native speaker's English;
- 'Failing to use correct forms' in tag questions, e.g. *isn't it?* or *no?* instead of *shouldn't they?*;
- Inserting prepositions where they are not needed, as in 'We have to study about...';
- 'Overusing' certain verbs which are very general in meaning, such as *do*, *have*, *make*, *put*, *take*;
- 'Replacing' infinitive constructions with *that*-clauses, as in 'I want that we go swimming' instead of '...to go swimming';
- 'Overdoing' explicitness, e.g. saying 'black colour' rather than just 'black'. (Seidlhofer 2004, 220)

Seidlhofer (2004, 220) claims that all of these features are frequently and systematically present in ELF communication, without causing communication problems. However, it should be noted that they would be viewed as errors when compared to a native speaker's use of English. Therefore, she uses quotation marks for terms such as 'dropping' and 'overusing'. Now, the question arises: how can these be useful in a study referring to a language different than English?

It may be worth trying to select the most important features of a *lingua franca*, namely those that can be used universally, with no reference to any specific language. It seems rather impossible to be done using Seidlhofer's very specific list. Therefore, following the present article's author's subjective opinion, two such characteristics can be enumerated, namely the fact that a *lingua franca*:

- is easily learnable due to its simplified structures and vocabulary, and
- includes numerous borrowings from other languages (usually the native languages of interactants).

Bearing these characteristics in mind, it can be stated that in order to see whether a given language possesses the potential for becoming a *lingua franca*, its learnability should be investigated, as a language which is difficult to remember cannot be used as a *lingua franca*. Consequently, the following section of the article will present the methodology of iterated learning, which provides a basis for analysing the learnability of linguistic units. However, before moving on, it is worth taking a moment to think about the reasons why English became a *lingua franca*, and how it displaced other languages striving for this status.

Apart from the obvious relation of English becoming a *lingua franca* and the centuries-long dominance of the British Empire in the world, which has already been mentioned in the introductory section of the paper, there are also other reasons for the language's success. Among them there are, for instance, the rise in importance of the USA in the 20th century, the official language of which is also English, and the related growth of the Internet. Still, as noted by Brosch (2015, 77), ELF research has yet to solve many problems and properly lay its foundations, which might prove to a certain extent that, firstly, the reasons why English became a *lingua franca* require further analysis, and, secondly, the very fact of being a *lingua franca* is not a permanent condition.

THE METHODOLOGY OF THE STUDY

As mentioned in the previous section, in order to conduct the experiments, the methodology of iterated learning as understood by Kirby and Hurford (2002) was applied. One of the most concise and, at the same time, widespread definitions of iterated learning was provided by a group of evolutionary linguists associated with the Centre for Language Evolution at the University of Edinburgh: Simon Kirby, Hannah Cornish, and Kenny Smith. According to them,

iterated learning is a process in which an individual acquires a behavior by observing a similar behavior in another individual who acquired it in the same way (2008, 10681).

Initially, experimental research into language evolution with the use of iterated learning methodology involved only mathematical models and computational simulations (e.g. Batali 1998, 2002; Brighton 2002; Kirby 2000, 2002, 2007). The basic structure of such simulations is the following: there is one or more teaching agent and one or more learning agent, as well as a meaning space (a shared set of concepts to talk about) and a signal space (empty at the beginning of the iterated learning process). One of the teaching agents is selected to randomly choose a sub-set of meanings from the meaning space that he or she has to express. If there is no signal to express the meanings, the agent creates it and a set of signal-meaning pairings emerges to be given as input for a learning agent, who changes them to a certain extent. Later, his/her data is given to the next learner, and so on. Their "language" evolves, and researchers are able to observe and analyse this process (Cornish 2011, 31). Among the most important findings of these experiments is the fact that over time the learnability or the ease of learning

the mini-language increases. The idea behind the implementation of iterated learning methodology in linguistic studies is to overcome one of the most common accusations against studying language evolution in a laboratory, namely that languages do not fossilise; therefore, they cannot be studied empirically (e.g. Fitch 2000, 262). Thanks to the application of iterated learning methodology, the process of emergence and development of an experimental mini language can be observed within several hours instead of several thousand or even hundreds of thousands of years (Waciewicz 2013, 11), which is also of particular importance for *lingua franca* studies.

In the case of the experiments presented in this article, the basic “alien fruit” model, which enhances learnability and the attractiveness of the study, utilising the methodology in question was used. As modern iterated learning experiments usually involve human participants, not computational models, such a solution was also applied here. The “alien fruit” experiment has not been described in detail by its originators; however, it is commonly used in iterated learning studies and was presented in a BBC Two Horizon TV documentary entitled “Why do we talk?”, shot between 2009 and 2010. In its original form used in language evolution studies, the “alien fruit” experiment involved each participant learning an artificial language composed of a finite set of meanings paired with signals to denote an object shown on the screen, in that case, an “alien” fruit. Each of the agents underwent a three-stage process of learning: training, testing, and transmission. The first participant was shown a set of “alien” fruit pictures, with signals denoting their “alien” names, displayed one by one. The names were randomly generated and unstructured and could not be associated with the presented objects in any way. The pictures shown to participants came from a structured meaning space consisting of three dimensions (shape, colour, and number) containing three variables (see Fig. 1 for shape variables; among colour variables there were: yellow, red, blue; and number variables: one, two, three). The participant was asked to learn the names to the best of his/her ability. In the testing phase, the learner was asked to name the pictures from memory. Finally, in the transmission phase, the answers were used to generate a new set of meaning-signal pairs that were to be shown to the next subject.

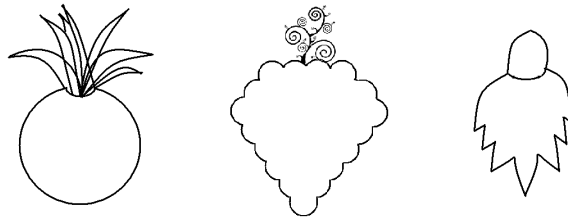


Figure 1. Shape variables used in “fruit” experiments.
Source: Own elaboration.

It can be stated that the procedure resembles the game of “Chinese whispers” (e.g. Cornish 2011, 50), where both the participant’s correct and incorrect answers are transmitted to and learned by the subsequent participant. Such an attitude might be very useful in *lingua franca* studies as it underlines the *lingua franca* features enlisted by Seidlhofer and related to learners’ mistakes. The following section presents the implementation of the “alien fruit” experiment in *lingua franca* studies; however, it has to be remembered that as we are not dealing with an evolutionary experiment here, its form is going to be simplified (the situation in which there is no signal to express the meaning and the participant has to come up with his/her own name to describe a given picture will be omitted).

THE EXPERIMENTS

The present article discusses two iterated learning experiments conducted with secondary-school participants aged 15–17, all of whom were native speakers of Polish and declared their lack of knowledge of the Italian language, and intermediate or upper-intermediate knowledge of the English language. The experiments were aimed at comparing the learnability of English and Italian words, in the former case in the background of randomly generated CVCVCV meaningless strings of letters, and in the latter in the background of words coming from the historical *lingua franca*. The methodology of iterated learning and the “alien fruit” experiment model were applied to overcome the problem related to the fact that language is normally adapted by a group of people within hundreds of years, while here conclusions could be drawn after a couple of hours. The hypothesis for both experiments, the first one with English words and randomised CVCVCV strings, and the second one with English and Italian words, was the following one: English words will be easier to learn as a result of iterated learning, as they constitute part of the current *lingua franca*.

The learnability hypothesis can be tested using Levenshtein Distance (known as LD), which can be facilitated with the use of a tool available online. The operation in question enables the comparison of distances between signal strings, calculating both substitutions between two different signals, and insertions as well as deletions of letters (Levenshtein 1966). The way in which it works for iterated learning experiments was described in detail by Hannah Cornish (2011, 90), who implements it in language evolution experiments:

[...] if we wanted to compare the similarity between two strings, *kopafilo* and *kapilo*, we would calculate the most efficient way of turning one into the other: in this instance there is one substitution (*o* to *a*) and two deletions (*a* and *f*), resulting in a Levenshtein Distance of 3. This figure can be normalised to give a value between 0 and 1 by simply dividing the LD by the length of the longest string (Brighton et al. 2005) – in this case giving us a value of 0.375.

Importantly, the closer the value was to 0, the less transmission error had occurred. On the other hand, if the value was equal to 1, it meant that the language had not been

learned at all. Consequently, it seems reasonable to state that in the case of English, which is the current *lingua franca*, LD should be closer to 0 than in the case of both randomised CVCVCV signals and words in the Italian language.

As mentioned previously, the hypothesis was tested in two experiments conducted with secondary-school students. In the case of the first experiment, they acted as the control group, being asked to learn both English and meaningless words generated randomly to see whether the learnability of English words was higher than those random ones. In the second experiment, meaningless signals were substituted with Italian words to see if there was a difference between the learnability of English and Italian words and whether Italian words were acquired by the participants to a greater extent than random words.

Experiment 1: English words and randomised CVCVCV strings


The “alien fruit” experiment was conducted with 9 pairs of participants, all of whom were secondary-school students aged 15–17 and created one chain of iterations. They were all volunteers, native speakers of Polish, declared intermediate or upper-intermediate knowledge of English, and were not remunerated in any manner. Considering that the initial generation was the input provided by the experimenter, there were nine generations of iterations in the chain, and the total number of generations was 10. What is meant by a chain here is a sequence of iterations where the output of one pair of participants becomes the input for the next pair. Interestingly, in the original “alien fruit” experiment shown in the BBC documentary, there were no pairs of participants, only individuals. The purpose of involving pairs instead of individual participants was to provoke a communicative learning environment in which the participants could negotiate their answers.

The initial input was a set of eight words, including four words in English and four randomly created 3-syllable strings with a CVCVCV structure to describe “alien” fruits varying in three aspects: colour, shape, and number. The participants, eight males and ten females, who worked in seven single-sex pairs and two mixed-sex pairs, were verbally instructed to familiarise themselves with words from an “alien” language describing eight alien fruits (or groups of fruits). After two time-unlimited learning rounds, they were asked to name the fruits (the testing phase). They were not aware of the fact that the words they produced would serve as input data for further generations of participants.

The input generation according to the three aspects mentioned above is presented in Table 1. Items to be shown to participants were randomly selected and displayed in two rounds, in the same order. During the experiment, the experimenter was present in the room, but not involved in conversation with the participants after the instructions had been given. The participants, on the other hand, were encouraged to read the names of “alien fruits” aloud in order to enhance memorization and to use any memorization technique that came to their minds.

Table 1

Input for the first generation of participants in Experiment 1. English words are in italics

| | <i>Blue</i> | <i>Yellow</i> | <i>Red</i> | |
|---|-----------------|----------------|-----------------|---|
|  | | | KANULA | 1 |
| | <i>DIVISIVE</i> | | | 2 |
| | | FOLUNA | | 3 |
|  | | | | 1 |
| | <i>EXPENSE</i> | | KALONU | 2 |
| | | | | 3 |
|  | | | <i>CLOISTER</i> | 1 |
| | | <i>RAFFISH</i> | | 2 |
| | NIPOKI | | | 3 |




Having conducted the experiment aimed at comparing the learnability of English words with the learnability of random CVCVCV strings, the second experiment, where randomised words were substituted with Italian ones, was carried out. It is described in the following subsection, and the results of both experiments can be found in the *Results* subsection.

Experiment 2: English and Italian words

The design of the second experiment was very similar to the one utilised in the first one; however, this time, randomly created words presented to the participants were substituted with Italian ones to see whether the learnability of English words would be higher, as it was hypothesised in the case of being presented in the background of randomised words. Once again, the participants were secondary-school students aged 15–17 with intermediate or upper-intermediate knowledge of English and no knowledge of Italian. They worked in pairs to create a chain of ten iterations, where the first generation had already been provided by the experimenter; therefore, a total of 18 participants (ten males and eight females, working only in single-sex pairs) created 9 generations. The initial input that the first pair of participants was asked to memorise and recall is presented in Table 2.

Table 2

Input for the first generation of participants in Experiment 2. English words are in italics

| | <i>Blue</i> | <i>Yellow</i> | <i>Red</i> | |
|---|-----------------|----------------|-----------------|---|
|  | | | MORBIDO | 1 |
| | <i>DIVISIVE</i> | | | 2 |
| | | ASTEMIO | | 3 |
|  | | | | 1 |
| | <i>EXPENSE</i> | | FEDELE | 2 |
| | | | | 3 |
|  | | | <i>CLOISTER</i> | 1 |
| | | <i>RAFFISH</i> | | 2 |
| | PERDITA | | | 3 |

Results


The present subsection analyses and compares the results of the two experiments described above. Also, it briefly mentions the results of the original evolutionary experiment conducted by the paper's author as a replication of the experiment shown in the BBC documentary in order to explain the motivation behind the hypothesis concerning greater learnability of English or English-related words.

Before moving on to the analysis of the two experiments presented in the previous subsections, it is worth mentioning the results of the original evolutionary experiment conducted by the paper's author, which were the reason for using iterated learning methodology in *lingua franca* studies. In the original experiment, instead of eight words being presented to the participants (all adults, taking part in the experiment individually, not in pairs), there were nine, all of which were randomised CVCVCV strings. As the experiment aimed to study language evolution, in the testing phase three new pictures of fruits were presented to the participants in each generation of iterations in order to see whether their language evolved syntactically. What was striking was the fact that in the final generation of iterations, six out of nine words created by the participants were either identical or very similar to English lexical units, despite the fact that in the input generation all of them were random and did not resemble any existing European language. What is more, the participants were asked to memorise the original words to the best of their abilities, and they were not allowed to use words that already existed (a detailed description of the evolutionary experiment, its design and results can be found in Rogalska-Chodecka 2015, 223–228). Therefore, it can be inferred that English words are an easy “way out” for native speakers of a different language to describe an object, the name of which they do not remember or know. Consequently, the first of the experiments described above was aimed at confirming the strength of English in such a situation.

The present subsection will address the learnability hypothesis with reference to Levenshtein distance calculations. The final state of the mini language created by the participants in the first experiment is presented in Table 3.

Table 3

The final state of the mini language created in Experiment 1. The words originally presented in English are in italics

| | <i>Blue</i> | <i>Yellow</i> | <i>Red</i> | |
|---|------------------|---------------|---------------|---|
|  | | | LENON | 1 |
| | <i>DIVIRSE</i> | | | 2 |
| | | LEMONA | | 3 |
|  | | | | 1 |
| | <i>EXPENSIVE</i> | | FALAN | 2 |
| | | | | 3 |
|  | | | <i>CLONER</i> | 1 |
| | | <i>RAFFIX</i> | | 2 |
| | BALU | | | 3 |

As can immediately be noticed in the table above, the English words remained almost unchanged or at least similar to English words after ten iterations, while the random ones did not resemble the originals in most cases. In order to see the learnability level, it was necessary to measure Levenshtein Distance to control the number of errors (insertions and substitutions of letters) made by the participants. In the case of the first experiment, the results presented in Figure 2 were obtained.

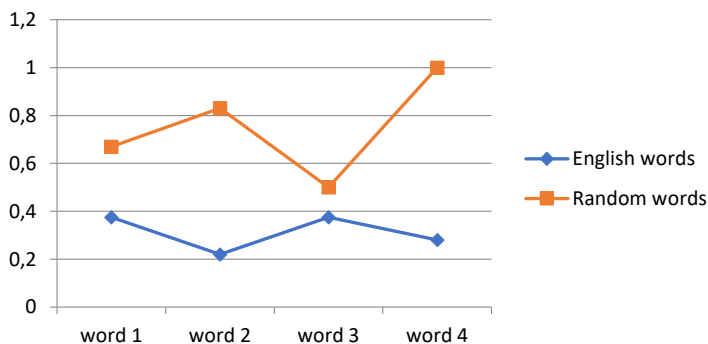



Figure 2. Error scores for English and random words.

The figure presented above leaves no doubt about the greater learnability of English words, as their Levenshtein Distance oscillated between 0,2 and 0,375. On the other hand, the Levenshtein Distance for randomly generated words was between 0,5 and 1, which means that sometimes there were no common points between the original and the produced words. The mean values for the distances are 0,31 for the English language and 0,75 for randomised signals. Consequently, it can be concluded that in the case of the first experiment, the hypothesis must be corroborated, as the learnability of English words was undoubtedly higher than the learnability of the randomly generated ones.

The final state of the mini language created by the participants of the second experiment, where there were English and Italian words only, is presented in Table 4. What can immediately be noticed is the fact that after ten generations the words produced by the last pair of participants were still very similar to what was shown as an input to the first pair. Apart from being informative about the learnability of the two languages, it proves that the participants made a lot of effort to memorise and recall the words.

Table 4

The final state of the mini language created in Experiment 2. The words originally presented in English are in italics

| | <i>Blue</i> | <i>Yellow</i> | <i>Red</i> | |
|---|----------------|----------------|---------------|---|
|  | | | MORBID | 1 |
| | <i>DIVISE</i> | | | 2 |
| | | ASTMO | | 3 |
|  | | | | 1 |
| | <i>EXPENCE</i> | | FEDELE | 2 |
| | | | | 3 |
|  | | | <i>KLOPER</i> | 1 |
| | | <i>RAFFISH</i> | | 2 |
| | PENDATA | | | 3 |

The figure below presents error scores based on Levenshtein Distance for the final generation in the second experiment.



Figure 3. Error scores for English and Italian words.

Surprisingly, it turns out that words from both languages had almost the same level of learnability. In the case of the English language, it oscillated between 0 and 0,5, which means that one of the words was recalled exactly in the same form after 10 iterations. Similarly, in the case of Italian words, there was one such example, and the error score was between 0 and 0,43. The mean values for the two languages were, respectively, 0,22 and 0,21, which leads to the conclusion that the learnability hypothesis concerning English was incorrect, as Italian words turned out to be slightly more learnable than the English ones. Consequently, it can also be stated that looking at the learnability levels of the two languages, it cannot be assumed that English became a *lingua franca* only because it is easily acquired by language learners, as Italian seems to be as learnable as English. Furthermore, it should be stated that in the case of linguistic units presented to the experiment's participants, Italian words not only seemed to be as learnable as the English ones, but they were definitely easier to learn than random linguistic units. Finally, it should be noted that words similar in Italian and English tend to be used interchangeably (as in the case of the Italian *morbido*, which turned into the English *morbid* in the final generation), which further proves that given proper historical background, nowadays Italian could be used as a *lingua franca* as well.

DISCUSSION

Several notions require further discussion, both in the context of studying the possibility of using Italian as a *lingua franca* nowadays and utilising iterated learning methodology in non-evolutionary linguistic research, in this case in research devoted to *lingua franca* studies.

At the very beginning of the study, it was presumed that high learnability might have been one of the most important factors contributing to the *lingua franca* status of the English language. However, the historical conditions were also definitely of major, if not

greater importance. It cannot, therefore, be forgotten that even though the experiments analysed in the previous section proved that the levels of learnability of English and Italian words are very similar, there are numerous other reasons why a given language becomes a *lingua franca*. The present paper constitutes an analysis of only one possible factor, and it is by no means suggested that a high level of learnability is enough for a language to be universally used in communicative situations between speakers of different native languages.

Despite the fact that iterated learning has been used in linguistics only in reference to language evolution so far, it seems appropriate to also use it in other linguistic fields, where in order to corroborate or disprove a hypothesis, an extensive time span, as well as a large number of participants, would be required, making the whole study practically impossible to realise. An additional advantage of using iterated learning methodology in other linguistic research areas is the fact that it still allows for an observation of the language evolution processes outside the normal strict laboratory conditions of evolutionary research, making the whole research project more useful in terms of interdisciplinary studies.

However, there are also certain limitations related to the use of iterated learning methodology in *lingua franca* studies, resulting both from the design of the experiment and the methodology used. As iterated learning experiments lead to the creation of language chains, they usually involve rather small groups of participants (it should be noted that there were only 36 participants in the experiments discussed in the previous section). In order to see the relation between the initial input and the final state of the mini languages produced by the participants, the maximum number of iterations in one chain should be restricted to ten. It means that in the case of employing two participants in each iteration, the number of participants in each chain is not larger than eighteen, taking into account the fact that the initial input is provided by the experimenter. Obviously, there are no restrictions regarding the number of chains to be produced; however, as each chain is different, it might be difficult to draw conclusions based on comparisons made between several chains containing completely different language items, despite the fact that the original input was identical for each chain.

Another limitation related to iterated learning methodology in general concerns the fact that the mini languages produced by the experiment's participants are not used in communicative situations. Consequently, it is impossible to observe the most commonly enumerated features typical of a *lingua franca*, such as simplified grammar, adjustment of words to communicative needs, or common "learners' mistakes". They are features normally seen in communicative situations only and cannot be analysed on the basis of an iterated learning experiment. Although attempts at implementing iterated learning methodology in the communicative context have already been made, they still require research and additional adjustment to be universally used (e.g. Rogalska-Chodecka 2019).

In the case of the experiments discussed in the present paper, yet another limitation, also related to the fact that iterated learning methodology was utilised, is the presence

of the participants' personal preferences in the mini languages produced and/or the expression of their memorisation abilities. As in each of the experiments there were only 18 participants involved, and despite the fact that they were closely related from the demographic point of view, such problems are rather common in this kind of study. They result in a situation in which the mini languages produced in each of the experiments, or each of the chains of one experiment, are usually completely different, as memorisation abilities of the participants vary significantly.

CONCLUSION

In the last twenty years the subject of ELF (English as a *lingua franca*) has become a promising research field in linguistics, especially sociolinguistics. However, as the present article attempts to prove, it can also be of interest for evolutionary linguists, as one of the recently popular research methodologies used in language evolution studies, namely the methodology of iterated learning, can also be used here. Consequently, such a study allows for inter- or trans-disciplinary linguistic projects (as suggested by Pitzl and Osimk-Teasdale 2016), so desirable in the current development of linguistics as a research area.

The present study refers to the possibility of forcing participants in an experiment to refer to a language different than English (in this case, Italian) in iterated learning experiments, in the same way they would normally refer to the linguistic units coming from the current *lingua franca*. The basic research question formulated in a simplified manner was to check whether it would be possible to use Italian as a *lingua franca* nowadays. On the basis of the second experiment, which used words in English and Italian, the question can be answered positively; however, it must be remembered that the linguistic potential of Italian was only studied with reference to the language's learnability. The experiment with Italian words shown as input to its participants proved that Italian is easily learnable, or even slightly more learnable than English, and that it can easily be remembered. Another aspect worth noting is the fact that as Italian is largely based on words with similar roots to English ones, therefore being somewhat similar to the current *lingua franca*, its learnability is further increased. All in all, the final conclusion of the present paper is that given similar historical conditions as English, Italian, being an easily learnable language, traditionally associated with a pleasant melody and rhythm, could regain its historical *lingua franca* status.

REFERENCES

- Adler, M. 1977. *Pidgins, creoles and lingua francas: A sociolinguistic study*. Hamburg: Buske.
- Batali, J. 1998. "Computational simulations of the emergence of grammar". In *Approaches to the Evolution of Language: Social and Cognitive Bases*, eds. J. Hurford, M. Studdert-Kennedy and C. Knight. Cambridge: Cambridge University Press, 405–426.

- Batali, J. 2002. "The negotiation and acquisition of recursive grammars as a result of competition among exemplars". In *Linguistic Evolution through Language Acquisition: Formal and Computational Models*, ed. T. Briscoe. Cambridge: Cambridge University Press, 111–172.
- Brighton, H. 2002. "Compositional syntax from cultural transmission". *Artificial Life* 8 (1): 25–54.
- Brighton, H., K. Smith, and S. Kirby. 2005. "Language as an evolutionary system". *Physics of Life Reviews* 2: 177–226.
- Brosch, C. 2015. "On the Conceptual History of the Term Lingua Franca". *Apples – Journal of Applied Language Studies* 9 (1): 71–85.
- Cornish, H. 2011. *Language Adapts: Exploring the Cultural Dynamics of Iterated Learning*. PhD thesis: The University of Edinburgh.
- Fitch, W.T. 2000. "The evolution of speech: A comparative review". *Trends in Cognitive Science* 4: 258–267.
- Firth, A. 1996. "The discursive accomplishment of normality. On 'lingua franca' English and conversation analysis". *Journal of Pragmatics* 26: 237–259.
- Kirby, S. 2000. "Syntax without natural selection: How compositionality emerges from vocabulary in a population of learners". In *Approaches to the Evolution of Language: Social and Cognitive Bases*, eds. J. Hurford, M. Studdert Kennedy and C. Knight. Cambridge: Cambridge University Press, 405–426.
- Kirby, S. 2002. "Natural language from artificial life". *Artificial Life* 8 (2): 185–215.
- Kirby, S. 2007. "The evolution of meaning-space structure through iterated learning". In *Emergence of Communication and Language*, eds. C. Lyon, C. Nehaniv and A. Cangelosi. London: Springer, 253–268.
- Kirby, S., H. Cornish, and K. Smith. 2008. "Cumulative cultural evolution in the laboratory: An experimental approach to the origins of structure in human language". *Proceedings of the National Academy of Sciences* 105(31): 10681–10686.
- Kirby, S., and J. Hurford. 2002. "The emergence of linguistic structure: An overview of the iterated learning model". In *Simulating the Evolution of Language*, eds. A. Cangelosi and D. Parisi. Cambridge: Cambridge University Press, 121–148.
- Levenshtein Distance Calculator. <https://planetcalc.com/1721/> (March 14, 2021).
- Levenshtein, V.I. 1966. "Binary codes capable of correcting deletions, insertions and reversals". *Soviet Physics-Doklady* 10: 707–710.
- Mair, C., ed. 2003. *The Politics of English as a World Language*. Amsterdam: Rodopi.
- Paradowski, M. 2013. "Barbara Seidlhofer: Understanding English as a Lingua Franca: A Complete Introduction to the Theoretical Nature and Practical Implications of English used as a Lingua Franca (Review article)". *The Interpreter and Translator Trainer* 7 (2): 312–320.
- Oxford Dictionary. https://en.oxforddictionaries.com/definition/lingua_franca (May 16, 2018).
- Pitzl, M.-L., and R. Osimk-Teasdale. 2016. *Review of English as a lingua franca: Perspectives and prospects. Contributions in honour of Barbara Seidlhofer*. Berlin: Mouton de Gruyter.
- Rogalska-Chodecka, K. 2015. "Investigating glossogeny via the iterated learning methodology: The effect of entrenched linguistic system(s) in human agents". In *Languages in contact 201*, eds. P.P. Chruszczewski, R.L. Lanigan, J.R. Rickford, K. Buczek, A.R. Knapik, J. Mianowski. Wrocław: Wyższa Szkoła Filologiczna, International Communicology Institute, 219–232.
- Rogalska-Chodecka, K. 2019. "The role of interaction in language evolution: Evidence from two iterated learning experiments with human participants". *Theoria et Historia Scientiarum* 16: 115–127.

- Seidlhofer, B. 2004. "Research Perspectives on Teaching English as a Lingua Franca". *Annual Review of Applied Linguistics* 24: 209–239.
- Waciewicz, S. 2013. "Ewolucja języka – współczesne kontrowersje" ["Language Evolution – Contemporary Controversies"]. In *Metodologie językoznawstwa I. Ewolucja języka. Ewolucja teorii językoznawczych* [*Methodologies of Linguistics I. Language Evolution. Evolution of Linguistic Theories*], ed. P. Stalmaszczyk. Łódź: Wydawnictwo Uniwersytetu Łódzkiego, 11–26.

Cechy *lingua franca* w języku włoskim. Dowody z ewolucyjnego eksperymentu językoznawczego

Słowa kluczowe: *lingua franca*, język angielski, język włoski, iterowane uczenie się, językoznawstwo ewolucyjne.

STRESZCZENIE

Nie ma wątpliwości co do statusu *lingua franca* języka angielskiego (np. Mair 2003). Można go było zaobserwować nawet w badaniu z zakresu językoznawstwa ewolucyjnego opartym na metodologii iterowanego uczenia się (por. Kirby and Hurford 2002). W eksperymencie z udziałem rodzimych użytkowników języka polskiego, który miał na celu stworzenie podstawowych, ale nowych systemów językowych, można było łatwo rozpoznać zakorzenione struktury językowe związane z językiem angielskim, pomimo faktu, że uczestnicy eksperymentu zostali poproszeni o nieużywanie jednostek językowych z istniejących języków (np. Rogalska-Chodecka 2015). Kiedy uczestnicy eksperymentu próbowali dostrzec wzorzec leksykalny lub syntaktyczny w zestawie ciągów spółgłoskowo-samogłoskowych CVCVCV, odwoływali się do słów angielskich niezależnie od swojego poziomu znajomości języka lub instrukcji eksperymentatora. W efekcie końcowym produktem eksperymentu nie był nowy system językowy, ale system zawierający zakorzenione struktury językowe związane z językiem angielskim, co dowodzi, że przy braku znanych struktur językowych najłatwiejszym wyjściem wydaje się być odwoływanie się do tych angielskich.

W niniejszym artykule postawiono pytanie, czy możliwe jest „zmuszenie” uczestników eksperymentu do używania niektórych elementów włoskiego leksykonu (dla określenia koloru, ilości i kształtu) zamiast tych pochodzących z języka angielskiego, pomimo deklarowanego braku znajomości języka włoskiego. Porównano wyniki dwóch badań, jednego z grupą kontrolną, której uczestnicy zostali poproszeni o nauczenie się słów pochodzących z języka angielskiego, a także losowych ciągów CVCVCV, oraz drugiego, „zanieczyszczonego” językiem włoskim, w którym losowe słowa zastąpiono włoskimi w celu ustalenia, czy język włoski jest tak samo użyteczny jak angielski z perspektywy uczestników eksperymentu i posiada cechy *lingua franca*, które można zauważyć w przypadku oryginalnego eksperymentu ewolucyjnego. Okazało się, że język włoski, ze względu na łatwą przyswajalność, wykazuje cechy *lingua franca* i przy podobnych warunkach historycznych jak język angielski mógłby odzyskać swój historyczny status *lingua franca*.