

Iago Parla Unamunda: Understanding a nonsense language

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Abstract

If you walked into a room and were greeted by an exclamation of “Velcro! Police, *comintern*. Harvadyu?”, how would you respond? Probably with a puzzled look, possibly followed by, “Fine thanks, and you?” Much research has been done in how the human mind understands a known language. But though nonsense languages have a rich literary history, there is much less written on how we understand and process nonsense languages, those for which there is little or no existing mental framework. This thesis explores how this sort of linguistic input might be processed and understood, focusing in particular the case of Unamunda, the nonsense language created by David Ives in his short play “The Universal Language” (1994). Unamunda consists of a combination of English words assigned new meanings, proper nouns (also assigned new meanings), plays on foreign words and phrases, and nonsense words. Its syntax is very nearly that of English, with occasional variations on word order. Though no one listening to Unamunda being spoken onstage has any prior familiarity with its lexicon or grammar, it is still possible to understand the utterances with little extra effort. After an overview of some theories and models of some various aspects of word recognition, including the effects of context on lexical decision-making, the clues to meaning supplied by syntactic structures, and phonotactic neighborhood activation, I move on to a discussion of my own experiment, in which subjects were asked to translate written, spoken, and video segments of Unamunda into English.*

Introduction

A guy goes into a restaurant, sits down, and orders Eggs Benedict. When the waiter brings it out, the man sees that his breakfast is being brought to him on a hubcap. So the guy asks the waiter, “Why did you serve my Eggs Benedict on a hubcap?” And the waiter looks at him and sings, “Cause there's no plate like chrome for the Hollandaise...”

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We've all heard puns before, the funny kind, the groan-worthy kind, and the simply puzzling kind. And we all know how they work: you take a common phrase, replace some of the words in it with similar-sounding ones which twist the meaning in some unexpected way, and duck to avoid the rotten tomatoes. To understand this one, you need to know three pieces of background information: That Eggs Benedict is served with a Hollandaise sauce, that hubcaps are often made of chrome, and the titular lyrics to the song "No Place like Home for the Holidays." Three of the eight words in the song, all of its nouns, are replaced by other English nouns to create the pun. Now imagine if not just some but all of the words were replaced; if most of their replacements were not English words, not even real words at all; if the background knowledge you needed included a big chunk of your English vocabulary, a smattering of words from three or four foreign languages, some Shakespeare, names and biographical information about a few fairly famous people; and fifties doo-wop; if instead of eight words the pun lasted for twenty-two pages. What you'd end up with is David Ives' (1994) short play "The Universal Language."

In "The Universal Language," Ives invents a nonsense language, a satirical take on Esperanto, the self-proclaimed "international language" (Esperanto League for North America 2005) created by the Polish ophthalmologist L. L. Zamenhof in the late 19th century (see Zamenhof 1887). Ives dubs his language Unamunda. The play begins with one character, Dawn, walking into the classroom of the other, Don, intending to learn Unamunda and overcome her stutter (or *tonguestoppard*). At first Dawn speaks only English and Don speaks only Unamunda. An interesting juxtaposition is set up between the two, as Dawn speaks English with a pronounced stutter; her disfluent language and

his non-language play off each other to point out different modes of impeded communication. As the play progresses, Dawn's fluency in Unamunda increases, until midway through the script when the two end up having something approaching a slam-poetry wordplay duet, entirely in Unamunda. In the final few pages the languages are switched with Don speaking mostly English and Dawn's lines in Unamunda, in which her stutter disappears, and he admits to her that Unamunda is a fraud ("A froyd... a *sigismundo* froyd... a parla trick") (Ives 1994: 50).

Watching the play, Don's gibberish quickly becomes recognizable speech. The million-dollar question: How?

The structure of Unamunda

The words which make up Unamunda can be divided into ten categories. They are:

1) English words re-assigned the meanings of phonologically similar words:

-beesnest for *business*

-gland for *grand*

-police for *please*

2) Plays on recognizable foreign words and phrases:

-bleeny for *good* (Italian *bene*)

-crayola for *believe* (Spanish *crea*)

-shantz for *dear* (German *schatz*)

3) Punning off phonologically similar proper names:

-*Ives-in* for *icing*

-*Howardjohnson* for *how do you say*

- *da palma* (as in the filmmaker Brian De Palma) for *the palm*

4) Nonsense words with varying degrees of phonological similarity to English words:

-*kaka-daymee* for *academy*

-*corngranulations* for *congratulations*

-*blizzardo* for *bizarre*

5) Real words with semantic and phonetic similarity to the English:

-*cargo* for *carry*

-*nozzle* for *nose*

6) Words with semantic but not phonetic similarity:

-*Bonanza* for *very*

-*Ding* for *yes*

7) Real foreign words with phonetic similarity to their English equivalents:

-*Mit* for *with* (German)

-*Morgen* for *morning* (German)

8) Real foreign words with no phonetic similarity to their English equivalents:

- *Geld* for *money* (German) (Though *geld* is phonologically similar to *gold*, which is semantically related to *money*.)

9) Complete nonsense words & English words with no connection to their English equivalents:

-*scoop* for *want*

-*eedon* for *left* (the direction)

10) Meaning derived from prefixes, suffixes, or infixes:

-*natooraltissimississippiementay* for *naturally* (emphatic)

-*polymorphous* for *very much in love* (*amorphous* at this point in the play has already been established as Unamunda for *in love*)

-*oopissima* for *not at all* (*oop* means *not*)

The categorization of words is not always clear-cut. Several of the words listed above have more than one thing going on at once. *Natooraltissimississippiementay*, for example, is a play on the Italian word *naturalmente*, but it also uses an infix to change the meaning of that word. *Rintintinnabulation* is both a nonsense word resembling the English word *tintinnabulation* and a play on the name of the fictional character Rin Tin Tin. *Corngranulations* uses real words to create a nonsense word phonologically resembling an English word (*congratulations*) with no relationship to the nonsense compound's parts.

We hear this sort of word-replacement all the time in daily speech. When someone yells “Oh, sugar!” or tells us that something is “none of your beeswax,” we understand immediately. The difference here is the prolonged nature of the word replacement and its extremity.

Ives isn't always consistent in his translation. Two prominent cases of this are the words for *I* and *you*. In the first section alone, *you* appears as the final syllable of the compounds *harvardyu*, *meetcha* and alone as *klahtoo* and *du*, which is its most common form throughout the play. *I* appears both as *iago* and *ya*. Elsewhere in the play, *you* also shows up once as *dusa* and *I* as the last syllable of *kennedy* (“can I”). There is no apparent logic behind when one form is used over another; the only possible explainable case that I can find is that the *-yu* of *harvardyu* is the closest to English of all of the examples (identical, in fact), a desirable quality for the first Unamunda line of the play.

Ives also makes a huge number of literary and cultural allusions that most of the audience will not pick up on but which add another layer of meaning for those who do. *Votsdiss minsky?*, meaning “what does this mean?”, uses the name of Marvin Minsky, a researcher in the field of artificial intelligence, specifically in giving machines human reasoning skills (Minsky). “Braga! Sonia braga!”, meaning “Bravo!” is a reference to the Brazilian movie actress Sônia Braga. *Klahtoo boddami nikto*, meaning “you’re not bothering me at all,” is a reference to “Klaatu barada nikto,” an oft-referenced line from the 1951 sci-fi movie *The Day the Earth Stood Still*. And Don’s last name, Finninneganegan, is in reference to James Joyce’s (1939) novel *Finnegan’s Wake*, a work similarly full of obscure allusions and linguistic experimentation.

Teaching & Understanding Unamunda

Ives sometimes uses theatrical devices to help the audience figure out what he means by these words. The setting of the play is in itself very useful; as Don teaches Dawn Unamunda, he also teaches it to the audience. He points to things as he names them, writes word with their English equivalents on the chalkboard, and answers several of Dawn's "how do you say..." questions. Once the meaning is established this way, he is free to use the word again, knowing the audience will understand.

But mostly the audience is left on its own to figure out what's going on. Several factors contribute to an audience member's comprehension, including body language, intonation, conversational and situational contexts, the syntax of utterances, and, probably most importantly, the phonological and semantic similarities between Unamunda and English.

Context

It is widely accepted that when the meaning of a word is in doubt, whether because of lexical ambiguity or simply because it the word is unfamiliar to the perceiver, what allows the people to decide on a meaning is its context (Tabossi and Sbisá 2001). We've all been told by our middle school English teachers to "figure it out in context" when encountering unfamiliar vocabulary items. Context may or may not be enough to decide the exact meaning of an unclear word. In the sentence "He took his *narl* from his pocket and unlocked the door with it," context makes it apparent that *narl* must mean *key*. In "I kicked the *narl*," the context says only that *narl* is a singular count noun and that the object which it represents is probably tangible and above a certain size since it can be

kicked (you can't kick a thought or a grain of sand, for example), but does not specify beyond that. While *ball* is the most likely meaning because of frequency, *cat*, *house*, *chair*, etc are still possible and there is nothing in the sentence to rule them out. Adding a preposition like *around* changes the meaning and opens up new possibilities; while you can't kick an idea, you can certainly kick around an idea, though in a much more metaphorical sense.

This kind of context exists in the play's Unamunda lines, but in a more opaque form – rather than one nonsense word such as *narl* surrounded by recognizable English words, every word in the utterance is gibberish. The gibberish is decipherable, however, so that in figuring out one word the listener adds to the context for the others. A fairly straightforward word like *du* (meaning “you”) will be easier to figure out based on other factors, creating context for the next-most-apparent words, which create more context, and so on until a totally opaque word like *doppa* (“have”) becomes clear, and “Du doppa da rektplatz” is correctly interpreted as “You have the right place.”

Clarifying context can also come from surrounding utterances, what Duffy, Kambe, and Raynor (2001) call the Global Context. In their experiment, they found that when test subjects were presented with an ambiguous word was put into a paragraph where the disambiguating context was located several sentences before the target word, the time it took them to interpret the target word was noticeably shortened as compared to paragraphs with the disambiguating context located after the ambiguous word, though the intended meaning was a subordinate one (i.e. *ring* rather than *music group* for *band*).

In Ives' play, the content-heavy sections, ones where information is being communicated or the story is being furthered, are almost always composed of Unamunda

lines alternating with English ones so the audience has something to grasp onto and get conversational context from without too much difficulty. Thus when Dawn talks about her stutter and Don replies, “Tonguestoppard,” the audience can infer that *tonguestoppard* means “stutter,” or at least has something to do with it. The sections entirely in Unamunda are not conversation so much as rhythmic, improvisational jams using mostly doo-wop syllables, more musical than speech-like. A lesson on pronouns ends with the repeated recitation, “En doppa, du doppa, dee doppa – day!”; a vocabulary exercise concludes with the following exchange:

Don: Doppa du a diddly anda?

Dawn: Iago doppa diddly anda, dusa doopa doppa diddly anda.

Don: Scoopa du da diddly bop?

Dawn: Oop scoopa diddly bop, iago scoopa bop da-*wow*!

(Ives 1994: 46)

Though these sections do have meaning (in this case, a conversation about big and little hands and books), it’s fine if the audience doesn’t grasp it, and likely many of them won’t.

Additional context in the play is provided by actions, gestures and props. The meaning of *varta* (“wait”) becomes clearer when yelled after a woman who has just left the room in a hurry (though the possibility of this being interpreted as the woman’s name is certainly present, only one of the eighteen test subjects in my experiment described below interpreted it as such); *handberger* is easier to interpret when the actress saying it is pointing to her purse. This applies as well to entire phrases, such as *squeegee la mezza* (“excuse the mess”), uttered while indicating a disorderly desk.

Syntax

In the opening lines of his poem “Jabberwocky” (from *Through the Looking-Glass, and What Alice Found There*, written in 1872), Lewis Carroll writes, “’Twas brillig, and the slithy toves / Did gyre and gimble in the wabe.” Though the function words of the lines are English, all of the content words are pure nonsense. Yet while it is impossible to say exactly what is going on, some things are clear: *brillig* could be an adjective or a time noun (“’Twas rainy,” vs. “’twas morning”), *slithy* is an adjective, *toves* are animate creatures, *gyre* and *gimble* are intransitive actions, and a *wabe* is a setting in which gyring and gimbling can take place. All this information is available just from the sentence structure, which is made apparent by the real English function words, which function as “glue” to hold the sentence together and give clues as to the part of speech and other features of the nonsense words.

It has been argued that not only words but also syntactic structures can hold meanings of their own. Kako and Wagner (2001) describe what they call the semantics of syntactic structures (TSOSS), claiming that those structures convey meaning independent of the content words contained in them. They define *syntactic structures* as “large units of syntax, in particular noun phrases (NPs) and verb phrases (VPs)” and *semantics* as “abstract notions such as objecthood, substancehood, causation, motion, and mental activity” (Kako and Wagner 2001: 102).

TSOSS, they say, gives only minimal information about nouns – a preceding *a* indicates a count noun; a non-pluralized form after *some* indicates a mass noun. Verbs, however, are much more richly indicated by their syntactic context. Kako and Wagner use the example of *kick*: “Susan kicked the ball” denotes an event involving contact;

“Susan kicked the ball to Bob” shows an event of transfer; “Susan kicked her way out of the locked closet” denotes motion by kicking. A typical interpretation would say that *kick* has three senses, but they cite the observation by Adele Goldberg (1995, cited in Kako and Wagner 2001: 103) that “the meaning of the verb varies systematically with its structural frame” and conclude that it is at least plausible then to assert that, parallel to the expression of allophones in phonology, the meaning of the verb remains constant while its syntactic frame changes the meaning of the utterance.

Other evidence for TSOSS is found in Roger Brown’s 1957 study (as described by Kako and Wagner 2001). Brown showed a group of three-to-five-year-olds a scene of a woman kneading confetti in a striped bowl and told them they were seeing either “sibbing,” “a sib,” or “some sib.” Then they were shown three pictures, one depicting kneading, one of confetti, and one of a striped bowl, and asked to find “sibbing,” “a sib,” or “some sib” (the same form they had been given while watching the scene). The children told to find “sibbing” identified the action; those told to find “some sib” went for the mass noun, confetti; those told to find “a sib” chose the individual object, the bowl. This shows that independent of any lexical meaning at all, the form of the language that the children heard affected their conception of the complex scene. Another experiment, involving nonsense labels given to different substances with or without an intentional shape, showed that “regardless of which construal [mass vs. count nouns] an entity affords without syntax, its construal can be shifted by the appropriate syntax” (Kako and Wagner 2001: 106).

With verbs, the syntax can provide information about abstract semantic properties such as causation, motion, transfer, and mental activity which “‘project’ systematically

from the verb's lexical-semantic structure into the syntax" (Kako and Wagner 2001: 106) – in other words, the subcategorization frame of even an unknown verb becomes apparent in the syntax and provides clues as to the meaning of the verb. In "I *snorked* the plate off the table," the syntax reveals that *snork* is a transitive verb involving movement; this is apparent even if the other content words are replaced by nonsense, as in "I *snorked* the *dorf* off the *lowie*." This narrows down its list of possible meanings; *snork* could still mean *push* or *knock* or *throw*, but not *think* or *love*.

This proves helpful in interpreting Unamunda phrases as well. The syntactic structure surrounding an unknown word does not reveal exactly what that word means, but it does narrow down the possibilities and provide some sort of expectation to aid further efforts at interpretation. Take the phrase "Iago trattoria Shakespeare enda Unamunda." By now the audience has probably figured out that *iago* means *I*, *enda* means *in the* or *into*, and Unamunda is the name of the language. *Shakespeare* is self evident. The resulting phrase is "I *trattoria* Shakespeare into Unamunda." *Trattoria* seems to be a verb; it is transitive; it takes the preposition into. From there, context and phonological similarities reveal that the correct meaning is *translate*. (And in case the audience hasn't gotten it yet, he starts in on "Vot loomen trip yondra fenstra sheint?" and any doubts are quickly dispersed.) Even in less specific contexts, some useful information is still obtained. From "alla da peepholes enda looniverse cargo a shlong enda hartz," we may not have any idea what the Unamunda words *cargo* or *shlong* mean ("carry" and "song," respectively), but we do know that *cargo* is a transitive verb and *shlong* is a singular count noun, which gives at least some assistance in the rest of the translation process. Unamunda is an uninflected language, so that information is not added on by

inflectional suffixes, and its word order for the most part parallels that of English, so such inferences about “the following word” are valid.

Neighborhood Activation

According to the model described by Vitevitch et al. (1999), a spoken word is broken down into pieces of various sizes as it is perceived by the brain. Some of these strings are a single phoneme long, some consist of several consecutive phonemes, and the longest one represents the entire lexical item. These “list chunks,” as they refer to them, from the short-term memory interact with items in the working memory – with the word *cat*, for instance, there are three different sized list chunks: one set that is one phoneme long each ([k], [æ], and [t]) two of two phonemes each ([kæ] and [æt]), and one consisting of the entire word [kæt]. Each of these accesses other words in its phonetic neighborhood (other words starting with [k], words ending with [æt], etc), with longer list chunks inhibiting the connections made by shorter ones ([kæ] inhibits any connections made by the list chunk [k] to items beginning with [ko], [ke], etc.) In the end, the item corresponding to the word *cat* is left with the most resonant connections with items in working memory and is recognized as the spoken word (Vitevitch et al. 1999). This is supported by the Retrieving Effectively from Memory (REM) model of lexical access, which posits that the memory traces of words consist of a number of lower-level elements, including semantic, contextual, and phonological information about the item (Wagenmakers et al. 2004).

A non-word, when perceived, will initiate the same process, activating phonetically similar lexical items in the working memory, the main difference being that

the token itself is not present in the memory and will eventually be recognized as a non-word. Still, even if they are ultimately rejected as candidates for the perceived word, other lexical items in the non-word's phonetic neighborhood have been activated. This, I would suggest, is one more tool contributing to the interpretation of Unamunda words. This seems reasonable, given that we encounter a large amount of variation in our day-to-day speech encounters. "Listeners compensate for highly variable speech signals to arrive at a prototypical acoustic-phonetic representation that can be matched against items in a lexical database stored in long-term memory" (Takayanagi, Dirks, and Moshfegh 2002: 585), constantly re-adjusting the aural input to match what is stored in their mental lexicon. Unamunda is an extreme case of variation, but why shouldn't the same compensation tools be applied there as well? Takayanagi et al. point out that increasing variation increases the cognitive load on the listener, but anyone who has watched the play will report that comprehension requires active listening; the amount of work being done to interpret Unamunda speech is noticeably higher from the listener's perspective than the work required to understand an English utterance. Given the situation (Don is obviously trying to say something meaningful, not just spouting random syllables, so the listener expects to understand him), there is incentive to find a word in the lexicon that is a good enough match for the perceived Unamunda word. Assuming they fit the context and syntactic makeup of the utterance as discussed above, the activated words most closely resembling the Unamunda are good candidates to supply meaning for the unknown nonsense words. Though their phonotactic probability varies significantly, from the very high-frequency [σκ] of *scoop* ("want") to the much less common [Σλ] of *schlong* ("song"), all Unamunda words are phonologically possible in English.

Wagenmakers et al. (2004) point out that there is semantic as well as phonetic information stored in the memory trace. This brings up the possibility that an analogous effect could apply to the semantics of a word as well as its phonetic makeup, helping to explain the interpretability of Unamunda words like *cargo*, which has both semantic and phonetic connections to its English equivalent, *carry*, and *bonanza*, meaning “very,” where the similarity is purely semantic.

As shown in my experiment and discussed later in this paper, the interpretations arrived at are not always the correct ones (*handberger* can be misinterpreted to mean “hamburger” rather than “handbag,” even with the extra information given by visual cues such as a purse on the table), but often enough they do make for an understandable sentence.

Other Universal and Nonsense Languages

Ives is not the first to use a nonsense language in a literary work, nor is he the first to come up with the idea of a universal language to “unite all humankind,” or in this case “unidivairsify alla de peepholes enda voold” (Ives 1994: 35). The idea of a universal language spoken by everyone is at least as old as the old-testament story of Babel, where an original, Adamic language was spoken by all people. In that story, the universal language allows them to take on the task of building a tower that will reach to heaven; as soon as they lose their common language they become unable to communicate with one another, and the project becomes impossible. The universal language enables peace and productivity; its loss causes disorganization and destroys the ability to progress.

One of the earliest known artificial languages is Lingua Ignota, created by the German abbess and mystic Hildegard von Bingen in the 12th century (Delahoyd). Hildegard created a new script of 23 characters to be used with her language. There is controversy over whether Lingua Ignota was intended to be a universal language or simply a secret language known only to Hildegard herself.

Probably the most famous modern example of an artificially created universal language is Esperanto. Esperanto was first described in 1887 in the book *Unua Lingua*, credited to one “Doktoro Esperanto,” a pen name used by L.L. Zamenhof, a Polish physician. Esperanto now bills itself as a “language of international communication,” “politically neutral,” and taking only a quarter of the time to learn as most other languages (Esperanto League for North America 2005). The aim of Esperanto, similar to that claimed by Don for Unamunda, is to unite all the various people of the world by removing the language barrier and allowing unimpeded communication between groups, without the political overtones that come with speaking one of the major languages currently in use. (Esperanto USA, a national organization devoted to promoting Esperanto use, points out the refusal of Quebec to declare English as an official language, for example.) SIL estimates 200 to 2,000 native speakers of Esperanto worldwide, with an additional 2,000,000 second-language speakers (Gordon 2005).

Many other artificially created “universal languages” exist and are in varying degrees of use, including Ido, largely based on Esperanto; Interglossa, developed in 1943 by Lancelot Hogben; Volapük, created in 1879 by Johann Martin Schleyer; Idiom Neutral, created in 1902 by Waldemar Rosenberger in an attempt to improve Volapük, and the Gibson Code, which uses only numbers rather than words (LangMaker). Even

today some linguists are attempting to group together established language families to discover deeper historical connections tying together more of the world's languages. One prime example of this is the proposed mega-family Nostratic, which, depending on whose work you're reading, may be the ancestor of the Indo-European, Afro-Asiatic, Altaic, Dravidian, Kartvelian, Uralic, and possibly other language families (Campbell 1999:182). Some are even so ambitious as to search for a single, original language out of which all other languages developed, known as Proto-World.

There is a strong literary tradition behind Ives' use of an invented nonsense language in his play. Perhaps the most extensive examples of languages invented solely for a literary work are those developed by J.R.R. Tolkien for his *Lord of the Rings* trilogy, published in 1954 and 1955. Lewis Carroll famously uses gibberish in his poem *Jabberwocky* (1872), which has been translated, nonsense words and all, into over two dozen languages (including, incidentally, Esperanto) (Augustsson 1999), Edward Lear takes a similar tack but in a less extreme form in much of his poetry (Lear 1911). *Finnegan's Wake*, by James Joyce (1939), uses a brand of English mostly ignoring standard conventions of form and grammar and full of invented words but still interpretable (to a certain extent at least) by the reader; the same thing is done to a much lesser extent in *Riddley Walker* by Russell Hoban (1980), with the greater changes there being found in sentence structure and word boundaries. Anthony Burgess uses an invented slang called Nadsat, heavily influenced by Cockney rhyming slang and Slavic words, for his characters in *A Clockwork Orange* (1962). These are all predated by specialized slang, cryptolects, and code words used in the vernacular throughout history.

In all of these examples, as in Ives' play, the words and/or grammar used are not those of English, yet are still interpretable to the average reader.

Interview with the Playwright

In order to decipher his intentions for *Unamunda*, I interviewed David Ives over email in Fall 2006 about the process he went through to create the language. Far from considering all the categories and correlations discussed in this paper, he wrote that when coming up with *Unamunda*'s lexicon, "I guess you could say that I was improvising, the way a pianist improvises, so I suppose 'top of my head' is the correct answer. I certainly had no specific pattern or rules in mind. A word gave way to another word, which in turn might feel like modifying itself. That's as close as I can get. It was a form of noodling." He knows German and French well enough to translate plays in those languages into English (Ives recently won a Jefferson award for his translation of Feydeau's "A Flea In Her Ear"), which explains the large number of plays on words and phrases from those languages. The play, he says, came out of a desire "simply to see how much gibberish an audience could understand, and how much fun I could have making them understand it."

It brings up some interesting points that with no linguistic training (he has none) and no patterns or rules in mind, Ives has managed to make his audience understand quite a bit of rather complex gibberish. If the process truly was intuitive, as he claims, what then does that suggest about the human mind's non-self-aware understanding of how language is constructed, perceived and understood? It seems to me that that is evidence for a fairly deep understanding of those processes.

Experiment

In order to begin to resolve the question of what types of information are most useful in helping people to interpret Unamunda utterances and what types of words are easiest to interpret, I ran a pilot experiment. This experiment was not statistically significant; the sample size was too small and not random, being made up primarily of my friends and hall-mates at Swarthmore College in addition to a few other students taking linguistics classes at Swarthmore who responded to my email and the offer of free candy. The eighteen participants were presented with sections of dialogue including both Unamunda lines and the surrounding English lines, as well as basic situational context (“In this scene, Dawn walks into Don’s classroom.”), and asked to interpret the text. Subjects were asked to give direct English translations of the Unamunda lines presented or, if they were not able to do that, a description of who said what in the scene or more generally what happened. The text was presented in three forms; one test group received the text only, one group received only an audio recording of actors reading the lines, and the third group received only a video recording of the same actors’ performance of the lines. The audio and visual groups were asked to replay a line only if there was some problem in the initial presentation – a loud noise which prevented them from hearing a word or a person walking into the room which made them look away from the screen, for example. All three groups were asked not to go back to a section once they had moved on to the next one, though they were free to revise their translations of earlier lines within the same section, as helpful context might be given by a later utterance in that scene. The approximate time it took each participant to finish the experiment was recorded without their knowledge. Accuracy and time taken were compared between the three groups.

There were some variable factors that may have affected the outcome of the experiment. One is the skill of the actors and their interpretation of the text. To create the video and audio recordings, I enlisted the help of two student actors (Markus Schlotterbeck, Swarthmore '10; and Madalyn Baldanzi, Swarthmore '08), both of whom I had recently worked with in unrelated theater projects. The resulting intonation and body language was produced by a combination of my direction and their intuition. A more skilled actor would be able to convey more meaning with intonation and body language, making the text easier for the audience to comprehend. The actors I used were competent and did a good job at conveying meaning, but were someone to re-run this experiment with a different cast their results might well be different because of that. Their individual pronunciations of words also appears to have had a noticeable effect in at least one place. In section five, the actors pronounced the word *handburger* more like *hamburger*; audio subjects were more likely than text subjects to interpret that section as a conversation about lunch. Subjects in the video group, who could see Dawn indicate her purse, mostly overcame the pronunciation and put down *handbag*, the correct response. Also, in order to eliminate differences in interpretation caused by variation in the actors' readings of the lines, the recording given to the audio group was pulled directly from the video recording so the two groups were receiving identical audio information. This meant, however, that the audio was not of optimal quality, given the limitations of the available recording equipment.

The sections used are as follows. I've inserted translations in square brackets after each line here for clarity's sake Where Ives supplies translations in the script I've used those, sometimes modifying them slightly for precision's sake ("Pleasure to meet you"

rather than his “Pleased to meet you” for *da meetcha playzeer*, for example); elsewhere the translations are my own. Stage directions to be included in the experiment are in italics. Italics outside stage directions are Ives’.

Section I:

(In this scene, Dawn walks into Don’s classroom. She is here to learn Unamunda.)

1. Don: Velcro! [Welome!]
2. Dawn: Excuse me?
3. Don: Velcro! Bell jar, Froyling! Harvardyu? [Welcome! Good day (bon jour), Miss. How are you?]
4. Dawn: How do you do, my name is- I’m sorry. (*She turns to go.*)
5. Don: Oop, oop, oop! Varta, Froyling! Varta! Varta! [No, no, no! Wait, Miss! Wait!]
6. Dawn: I’m very sorry to bother you.
7. Don: Mock – *klahtoo boddami nikto! Ventrice! Ventrice, ventrice. Police!* [But – you’re not bothering me at all! Enter! Enter, enter. Please!]
8. Dawn: Really – I think I have the wrong place.
9. Don: *Da rroongplatz? Oop da-doll! Du doppa da rektplatz! Da-meetcha playzeer. Comintern. Police. Plop da chah.* [The wrong place? Not at all! You have the right place! Pleasure to meet you. Come in. Please. Have a seat.]
10. Dawn: Well. Just for a second.
11. Don: (*cleaning up papers from the floor*) *Squeegie la mezza. (He points to a chair.) Zitz?* [Excuse the mess. Sit?]

Section II:

(Later in the same scene.)

1. Dawn: Well, it says- (*reading from a newspaper clipping*) “Learn Unamunda, the universal language.”
2. Don: Lick Unamunda, da linkwa looniversahl! [Learn Unamunda, the universal language.]
3. Dawn: “The language that will unite all humankind.”
4. Don: Da linkwa het barf oonidevairsify alla da peepholes enda voold. (Dawn raises her hand.) Quisling? [The language that will unite all the peoples of the world. Question?]
5. Dawn: Do you speak English?
6. Don: Johncleese? Squeegee, squeegee. Alaska, iago parladoop johncleese. [English? Excuse me, excuse me. Alas, I don’t speak English.]

Section III:

(Later in the same scene.)

1. Dawn: You know, it’s strange how much I understand.
2. Don: Natooraltissimississippiementay! Linkwa, pink dama, arf armoneea. *Moozheek*. Rintintinnabulation! Epp Unamunda arf da *melodeea looniversahl!* Porky alla da peepholes enda vooold – alla de peepholes enda looniverse cargo a shlong enda hartz. Epp det shlong arf ... Unamunda! [Naturally! Language, sweet lady, is harmony. Music. And Unamunda is the universal melody. Because all the people in the world – all the people in the universe carry a song in their hearts. And that song is... Unamunda!]

Section IV:

(Later in the same scene.)

1. Don: Arf raddly? [Are you ready?]

2. Dawn: Yes. I'm raddly.

3. Don: Raza la *tabooli*. Konsentreeeren. Lax da Hoover, lax da Hoover. Epp echo mi.

[Clear your mind. Concentrate. Relax your mouth, relax your mouth. And repeat after me.]

Section V:

(Later in the same scene.)

1. Dawn: Lassmi getmi geld fonda handberger. [Let me get my money from my handbag.]

2. Don: Handberger?

3. Dawn: (*Holding up her purse.*) Handberger. (*Holding out money.*) Dots alla da geld ya doppa mit mi. Cheer. Melgibson da rest enda morgen. [My handbag. That's all the money I have with me. Here. I'll give you the rest in the morning.]

Section VI:

(Later in the same scene.)

1. Dawn: Iago arf amorphous mit du. [I'm in love with you.]

2. Don: Amorphous? [In love?]

3. Dawn: Polymorphous. [Head over heels].

4. Don: Verismo? [Really?]

5. Dawn: Surrealismo. [And truly.]

These scenes include examples from all of the categories I discussed earlier. Listed by section, the particular words and phrases I'm looking out for are below. If a word appears more than once, I've only listed its positions in the first section in which it occurs. In the foreign phrases section, often a word could be playing off a word from French, Spanish, or Italian. In those cases I've listed the Italian version of the word being referenced and listed the language as "Romance." I've included broad IPA transcriptions to help clarify the relationship to the Unamunda word.

1) English words or phrases assigned the meanings of other, phonologically similar words or phrases:

Section I, lines 1 and 3: Velcro – welcome

Section I, line 3: Harvardyu – How are you?

Section I, line 7 and 9: Police – please

Section I, line 9: Comintern – come in

Section I, line 9: Plop – pull up

Section I, line 11: Squeegie – excuse (me)

Section II, line 2: Lick - learn

Section II, line 4: Peepholes – people

Section II, line 4: Quisling - question

Section II, line 6: Alaska – alas

Sec II, line 6: Iago – I

Section III, line 2: Shlong – song

Section V, line 3: Lax – relax

Section V, line 3: Cheer – here

2) Plays on recognizable foreign words and phrases:

Section I, line 3: Bell jar – good day (*bon jour* [βο] Zu®)– French)

Section I, lines 3 and 5: Froyling – Miss (*fräulein* [φρ□ιλαιν] – German)

Section I, line 5: Varta – wait (*warte* [va®tE] – German)

Se I, line 7: Mock – but (*ma* [ma] – Romance)

Section I, line 7: Nikto – not (*nicht* [νιξτ] – German)

Sec I, line 9: roongplatz/rektplatz – wrong place/right place (*recht* [®Eξτ], *platz* [πλατσ] – German)

Section II, lines 2 and 4: Linkwa – language (*lingua* [λινγωα]– Romance)

Section II, line 6: Parladoop – not speak (*parla* [παρλα] – Romance)

Section III, line 2: Dama – lady (*dame* [δαμ] – French; also *dame* [δαμ↔] in German)

Section III, line 2: Porky – because (*perche* [περκε], though closer to Spanish *porque* [πορκε] – Romance)

Section IV, line 3: Raza la tabooli – clear your mind (*tabula rasa*, usually pronounced [τΘβφυλα ραζα] in high school history classes– Latin)

Section IV, line 3: Konsentreeren – concentrate (*konzentrieren* [κοντσEντ®ι®Eν] – German)

Section V, line 1: Lassmi – let me (*lass mich* [λασσ μιξ] – German)

Sec VI, line 1 and 2: Amorphous – in love (*amore* [αμορε] – Romance)

Sec VI, line 3: Verismo – really (*vero* [ἄερο] – Romance)

3) Punning off phonologically similar proper names:

Section II, line 6: Johncleese – English

Section V, line 3: Melgibson – I’ll give

4) Nonsense words with varying degrees of phonological similarity to English words (by far the largest category because it also includes most of the non-content words (I, the, that); I won’t list all of the available examples):

Section I, line 7: boddami – bother me

Section I, line 7: Ventrica – enter

Section I, line 9: Da-doll – at all

Section I, line 9: Da-meetcha playzeer – pleasure to meet you

Section I, line 9: Chah – chair

Section I, line 11: Mezza - mess

Section I, line 11: Zitz – sit

Section II, line 2: Looniversahl – universal

Section II, line 4: Oonidevairsify – unite (un-diversify)

Section II, line 4: Enda voold – in the world

Section III. line 2: Armoneea – harmony

Section III. line 2: Rintintintinnabulation – tintinnabulation (ringing of bells)

Section III. line 2: Hartz – heart

Section IV, line 1: Arf – are/is/am

Section IV, line 1 and 2: Raddly – ready

Section V, line 2: Handberger – handbag

Section VI, line 5: Surrealismo – really

5) Words with semantic and phonetic similarity:

Section III, line 2: Cargo – carry

6) Words with semantic but not phonetic similarity:

Section IV, line 3: Echo – repeat

Section V, line 3: Hoover - mouth

7) Real foreign words with phonetic similarity to their English equivalents:

Section I, line 11: La – the (Italian)

Section V, line 3: Mit – with (German)

Section V, line 3: Morgen – morning (German)

8) Real foreign words with no phonetic similarity to their English equivalents:

Section V, line 3: Geld – money (German)

9) Unamunda words with no connection to their English equivalents:

Section I, line 5 and 9: Oop – no/not (also appears as part of parladoop in section II)

Section I, line 9: Doppa – have

Section III, line 2: Pink – sweet

10) Meaning derived from prefixes or infixes:

Section III, line 2 *Natooraltissimississippi-* naturally (emphatic)

Section VI, line 3: Polymorphous – very much in love.

Each section plays its own role in the study. Section I is the opening of the play, and as such provides a context for the rest of the sections and an introduction to Unamunda. In section II, Don's Unamunda lines are a direct translation of Dawn's English ones which directly precede them. Study participants for the most part caught on to that; average scores for this section were higher than for any other. Section II also serves as sort of a key for section III, providing context and meaning for several words which show up in III. III is a longer block of solid Unamunda than any of the other sections, and also provides the only example in the experiment of a word with both semantic and phonetic similarity to its English counterpart (*cargo* for *carry*) and of a word in which extra meaning is provided by an infix (*-issmississippi-*, a play on the Italian superlative suffix *-issimo*). In *echo*, section IV gives us the clearest example of an independent word with semantic but no phonetic similarity to its English counterpart: *hoover*'s semantic connection to *mouth* is obscure – both a Hoover vacuum and a mouth are openings into which certain objects, be they dust or food, disappear; *plop*, from the phrase *plop da chah* in section I, references both the meaning of the English word *plop*, as in *plop into the chair*, and the phonetically similar *pull up*, as in *pull up the chair*. Section V gives us the only example of a foreign word which does not phonetically resemble its English equivalent (*geld* for *money*) and the only example of real foreign

words with phonetic similarities to the English being used as content words (*morgen* for *morning*). Section VI gives us *polymorphous*, in which the prefix *poly-* is used to change the meaning of a previously established Unamunda word, *amorphous*.

The aim of this study is to see what types of information are most useful for a person trying to interpret this type of utterance. The text-based group received the minimal amount of information – they see the words written but do not hear the phonetic qualities of the words or any intonation and can see no gestures that might provide clues to a word’s meaning. They were instructed to “try to sound out the words in your head” in order to avoid their having no idea how to deal with the language when first encountering it, but non spoke the words aloud and so did not have direct aural access to phonological cues. The audio group got one extra level of information. They were able to hear the words, triggering more effective phonetic neighborhood activation, and had access to intonation to help recognize common phrases. The video group had the additional context provided by gestures, body language, and physical setting – “Plop da chah” becomes more transparent when the speaker is holding out a chair and gesturing for the listener to sit, and “Iago amorphous mit du” should be clearer when the speaker is batting her eyes and smiling invitingly at the other actor.

In one similar experiment (Kako 2005), interactions between infants and their mothers were videotaped and the 24 most common nouns were picked out. The sound was removed from these tapes and a beep inserted when the target word was spoken by the mother and transcripts were made of the dialogue. Test subjects were asked to guess the target word. Some were shown the muted video, some were given an alphabetical list of words which co-occurred in a sentence with the target word, some were given access

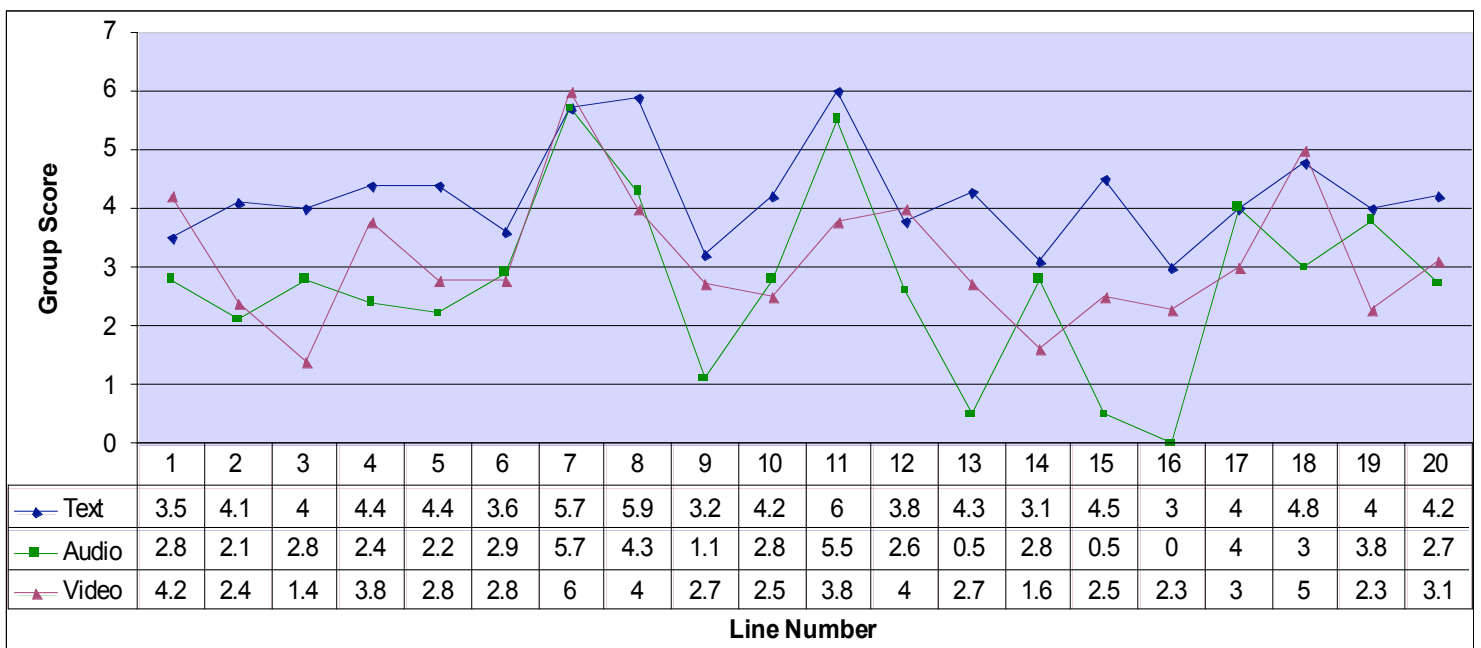
to the syntax of the sentences, in which all content words were converted to nonsense words, and some were given a combination of these. (When syntax and co-occurrence were both given, the sentence was restored to its original state except that the target word remained nonsense, i.e. “What does the *renk* do?”). Kako found that when participants were given only the co-occurrence lists or syntax, success rates in guessing the target noun were very low, averaging 11.7% and 6.2% respectively. Subjects given only the muted video fared much better, with an average of 44.9% answering correctly. Combinations of input produced higher success rates; for example, subjects given both the co-occurrence lists and syntax guessed correctly 41.4% of the time. Subjects with access to all three types of input had an 85.2% success rate (Kako 2005: 238).

Results

Participants wrote their translations on answer sheets which provided the script for the sections being used, with any Unamunda lines deleted but with the English lines and stage directions preserved. I then rated each response on a scale of zero to six, with six being a perfect translation of the lines and zero being no understanding at all. A five was very close to the target translation but with some small errors, for example “You came to the right place” rather than “You have the right place” for *Du doppa da rektplatz*, where *doppa* means *have*. Translations which were semantically off but preserved a clear syntactic structure were given a one, for example “Read the table” or any imperative verb + *the* + noun string for *raza la tabooli* (“clear the mind,” a reference to the Latin phrase *tabula rasa*). I assigned a score to each sentence, as defined by the punctuation in the script. The scores were then averaged to give the individual a score for the line, and

individuals' scores were averaged to get a group score for each line. All averages were rounded to a single decimal place. I attempted to be as consistent in my ratings as possible, but scores are still quite subjective. Subjects' responses and my ratings of them are provided in the appendix. The group averages for each line are represented by numbers one through nineteen below. The overall group averages for the entire experiment are represented by number twenty.

Figure 1: Experimental results



As can be seen from the graph, the test group given the text of the play did consistently better than the other two groups. The video group did slightly better overall than the audio group, with an overall average score 0.4 points higher. The audio scores were much more variable than the video ones, spiking and dipping sharply and often.

Video group averages stayed within a range of 1.4 to 6; audio hit zero once and did not reach a 6, never surpassing 5.7.

The reasons for the video group's higher-than-expected performance are evident; why the audio and video results aren't more strongly differentiated is less clear. While the video and audio groups only had access to the lines for as long as it took to speak them (they were only allowed to watch/listen to the clips once), the text group was allowed to look at the lines and re-read them for as long as they wanted, and many took full advantage of that time. Members of the video group took ten to fifteen minutes to finish the survey, audio up to 25 minutes with an average of just under twenty, and only 2 minutes and 44 seconds of that time (the length of the recording) was actually spent accessing the material; subjects given the text of the play took no less than 20 and up to 45 minutes to complete the experiment, with an average response time of half an hour, and could look at the text for that entire time. That extra time with the material gave them the chance to think longer about the material, discover more obscure references (*tabula rasa* in line 12, for example) and not have to rely on a single hearing to provide all the information nor on their memory to retain the line while they pondered for extended amounts of time. They were also less likely to leave out bits of dialogue in their translations and therefore lose points because they had the information all in front of them, as opposed to the text and audio groups, who had to remember everything that was said and often left out initial exclamations or phrases within utterances. Within the audio and video groups there seems to be little or no correlation between the amount of time taken by each subject and that subject's average score; within the text group subjects who took longer tended to do better.

Figure 2: Average Score and Time Taken:

	Text						Audio						Video					
Subject	a	b	c	d	e	f	a	b	c	d	e	f	a	b	c	d	e	f
Score	3.2	4.1	4.2	4.3	4.6	4.9	1.8	2.3	2.6	2.9	3.3	3.5	2.1	2.3	2.7	3.3	3.8	4.1
Time (in minutes)	20	20	30	20	40	45	25	15	20	25	10	15	15	10	15	10	15	10

Note: In order to better present the relationship (or lack thereof) between time taken and score received, the order in which these results are presented here is not the same as that in the appendix, i.e. respondent “text a” in this table is not the same respondent “text a” in the appendix.

This disparity could be fixed by either limiting the length of time the text group has access to the text, say by displaying it on a screen for a certain number of seconds and then removing it, or by allowing the audio and video groups to replay their sections as often as they’d like.

At the end of the survey there is a list of questions. In order to see whether the subject has learned any Unamunda, questions one through three ask them to produce the words for *have*, *people*, and *language*, all of which appear more than once in the presented sections. These are members of categories nine, four, and two, respectively, and offer some indication as to whether one type of word relationship “sticks” better than another.

Figure 3: Group Scores on Retention Questions

	Question 1:	Question 2:	Question 3:	Average
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	“have”	“language”	“people”	
Text	3	4.8	4.3	4
Audio	0	3.8	4.3	2.7
Video	0	3	2.7	1.9
Average	1	3.9	3.8	

Half of the members of the text group were able to correctly identify *doppa* as the Unamunda word for “have;” none of the audio or video subjects came close. (The three guesses given were *hab*, *carri*, and *Velcro*.) *Linkwa* for “language” and *peepholes* for “people” both fared far better. Though *doppa* appeared twice in the sections used and *linkwa* and *peepholes* each appeared three times, I don’t think that accounts in the stark difference in retention rates, though the actor’s pronunciation of *peepholes* as something much closer to “peoples” may well have contributed to the success of that word. More likely is that, unlike *doppa*, *linkwa* and *peepholes* have some connection phonetically to either the English or Romance version of the target word and therefore are easier to remember. Interestingly, there was no connection between the foreign languages a subject had studied and that person’s ability to remember *linkwa*; though it is a play off a the Romance word for language and does not closely resemble either the English or the German (*sprache*) lexical equivalent, German speakers did just as well as their French- or Spanish-speaking counterparts.

Question four asks the subject to make up an Unamunda word for *seatbelts*. The range of answers should give some insights into the subjects’ understanding of how the language works. Most responses used Ives’ most common word-building strategy, making up nonsense words which sounded similar to the English word *seatbelt*, often

using real English words to create a nonsense compound, for example “beatheld,” “meatfelt,” and “sealbook.” Some respondents went a step further and made their nonsense word resemble in some way a foreign word, producing outputs like “sitze-felt,” which was the response closest to *sitzbells*, the word Ives uses to mean “seatbelt” in a section of the play not used in the experiment. One subject utilized the semantic connections between the words *hold* and *seatbelt* to create “holdensilla.” Two of the responses given, “vintes” and “durmatto,” seemed to have no discernible connection to the English word. The first of those came from the audio group, the second from the video group, to subjects with average scores of 1.8 and 2.7 respectively, both of which are below their group’s average.

Question five asks whether the subject’s first language is English; though I expected native English speakers to have an advantage over non-native speakers because of their higher level of intuitive familiarity of the language, this did not seem to be the case. Of the two non-native speakers of English (both listed Spanish as their native language) one (in the audio group) had results significantly below her group’s average (1.8 vs. 2.7 out of a possible 6), but one (in the video group) scored higher than his group’s average (3.8 vs. 3.1).

Question six asks whether the subject has ever studied French, German, Spanish, Italian, or Latin. Since many of these words are either plays off foreign words, actual foreign words, or nonsense words constructed to resemble foreign words (*la mezza*, *donutsayev*), participants who have studied certain languages should be at an advantage. Since all of the subjects had studied at least one of those languages for a minimum of three years, any effects produced by exposure to foreign languages are obscured, as there

were no monolingual test subjects to use for comparison. Subjects who spoke more languages did not reliably score higher than those who'd only studied one language.

Question seven asks whether the subject and their close friends or family usually enjoys puns, as I would expect an avid punner (or someone who often hears puns from friends or family members) to have a distinct advantage over someone who doesn't use puns as regularly. The connection wasn't very marked, but none of the three subjects who responded to this question with "no" had scores above their group's mean.

Question eight asks the subject to rate the difficulty of the task on a scale of one to ten. Perceived difficulty had no connection to the subject's performance on the experiment. Fourteen of the eighteen test subjects ranked the difficulty of the task at a six, seven, or eight, and two more gave it a five. The remaining two subjects ranked it a one and a three, earning scores of 2.7 (0.4 below her group's average) and 4.9 (the highest score earned), respectively. There was no correlation whatsoever between the amount of time a subject took to complete the experiment and the difficulty ranking they gave it.

In the end, the most valuable resource in correctly interpreting Unamunda seems to have been time, as evidenced by the high scores of the text group. Given that the video group did in the end have a higher mean score than the audio group, the additional information provided by gestures, props, and setting does seem to have been helpful. Of the four lines for which the audio scores were especially low (lines nine, thirteen, fifteen, and sixteen), the last three all relied heavily on that visual information – Dawn reaching into her lap for her purse in line nine, and her melodramatically amorous body language in fifteen and sixteen.

Variations on a Theme

Someone with more time and resources could try these variations on my experiment:

- replacing category-four words with nonsense words bearing no phonological resemblance to their English equivalents.
- replacing category-one words with others that eliminate the phonological similarities to the intended English word.
- giving all three test groups text in addition to their other media
- letting the groups replay the section as many times as desired
- using more native speakers of Spanish, French, Italian, or German as test subjects

Appendix: Experimental data and ratings

Section I:

(In this scene, Dawn walks into Don's classroom. She is here to learn Unamunda.)

1. Don: Velcro! [Welome!]

Text:

- a) Hello! (3)
- b) Hello! (3)
- c) Welcome! (6)
- d) Hello. (3)
- e) Hello! (3)
- f) Hello! (3)

Average: 3.5

Audio:

- a) – (0)
- b) Hello (3)
- c) Come in (2)
- d) Hello (3)
- e) Welcome. (6)
- f) Hello. (3)

Average: 2.8

Video:

- a) Welcome. (6)
- b) Welcome. (6)
- c) Welcome. (6)
- d) How are you? (1)
- e) Hello (3)
- f) Hello! (3)

Average: 4.2

Dawn: Excuse me?

2. Don: Velcro! Bell jar, Froyling! Harvardyu? [Welcome! Good day (bon jour), Miss. How are you?]

Text:

- a) Hello! (3) (0) How do you do? (5) (avg: 2.7)
- b) Hello! (3) Bonjour? Ma'am! (6) How are you? (6) (avg: 5)
- c) Welcome! (6) – ma'am! (3) Who are you? [“how do you do” crossed out].(2) (avg: 3.7)
- d) Hello, (3) bon jour, come in! (3) How are you? (6) (avg: 4)
- e) Hello! (3) Welcome, miss! (5) How are you? (6) (avg: 4.7)
- f) Hello! (3) Pleasure Froyling! (4) How are you? (6) (avg: 4.3)

Average: 4.1

Audio:

- a) (something?) (0) (0) – How are you? (6) (avg: 2)
- b) Hello (3), come in, (1) how may I help? (0) (avg: 1.3)
- c) I said come in. (0) (0) (0) (avg: 0)
- d) Hello. (3) (0) Harvard University. (0) (avg: 1)
- e) Welcome, (6) darling, (2) how are you? (6) (avg: 4.7)
- f) Hello (3) darling (2) how are you. (6) (avg: 3.7)

Average: 2.1

Video:

- a) Welcome. (6) (0) How are you? (6) (avg: 4)
- b) Welcome. (6) (0) How do you do? (5) (avg: 3.7)
- c) Welcome. (6) (0) (0) (avg: 2)
- d) (0) (0) How are you? (6) (avg: 2)
- e) How do you do? (0) (0) Harvard + Velcro you! (0) He's aggressive (why?) and made her angry. (avg: 0)
- f) Hello! (3) – (0) How do you do? (5) (avg: 2.7)

Average: 2.4

Dawn: How do you do, my name is- I'm sorry. (*She turns to go.*)

3. Don: Oop, oop, oop! Varta, Froyling! Varta! Varta! [No, no, no! Wait, Miss! Wait!]

Text:

- a) Oh, oh, oh! (3) Wait, miss, (6) wait! Wait! (6) (avg: 5)
- b) Oh, oh, oh! (3) Wait ma'am! (6) Wait! Wait! (6) (avg: 5)
- c) Wait, wait, wait! (4) Stop ma'am! (4) Stop, stop! (3) (avg: 3.7)
- d) No, no, no. (6) wait come in! (4) Wait wait! (6) (avg: 5.3)
- e) Wait, wait, wait! (4) Come, miss! (4) Come! Come! (1) (avg: 3)
- f) No, no, no! (6) Varta (name), Froyling (name). (0) Varta! Varta! (0) (avg: 2)

Average: 4

Audio:

- a) essentially “no, (5) don't go, (2) stay, stay.” (3) (avg: 3.3)
- b) No, (5) wait, (3) come back, come back. (2) (avg: 3.3)
- c) Don't worry (0) – I was finishing up (0) – come come (1) (avg: 0.3)
- d) Oh no. (5) Don't go. (2) Stay, stay. (3) (avg: 3.3)
- e) (0) Wait darling (?) (maybe 'fraulein') (6) wait wait. (6) (avg: 4)
- f) (6) Pardon me darling? (1) (0) (avg: 2.3)

Average: 2.8

Video:

- a) No, (5) come (1) come in here (1). (avg: 2.3)
- b) Oh... (2) (0) come in, come in. (2) (avg: 1.3)
- c) – (0) (0) (0) (avg: 0)

- d) **(0)** Please stay **(1)**, come in. **(2)** **(avg: 1)**
- e) Oo **(2)** **(0)** don't go **(2)** **(avg: 1.3)**
- f) Oh, oh, **(3)** wait, **(3)** come in, come... **(2)** **(avg: 2.7)**

Average: 1.4

Dawn: I'm very sorry to bother you.

4. Don: Mock – *klahtoo boddami nikto!* *Ventrica!* *Ventrica, ventrica.* Police! [But – you're not bothering me at all! Enter! Enter, enter. Please!]

Text:

- a) You're not bothering me. **(5)** --- **(0)** Please! **(6)** **(avg: 3.7)**
- b) No – [tells her she's in the right place] **(0)**. Come in, come in. **(6)** Please! **(6)** **(avg: 4)**
- c) **(0)** **(0)** Please! **(6)** **(avg: 2)**
- d) You're not bothering me! **(5)** Come here? **(3)** Please! **(6)** **(avg: 4.7)**
- e) No, you are not bothering me. **(6)** Come in! Come in, come in, **(6)** please. **(6)** **(avg: 6)**
- f) Nonsense! You're not bothering me at all! **(5)** Come in! Come in, come in. **(6)** Please! **(6)** **(avg: 5.7)**

Average: 4.4

Audio:

- a) It's not a problem. **(2)** Sit down/stay, sit down/stay, **(1)** please. **(6)** **(avg: 3)**
- b) No, you're not bothering me, **(6)** come in, sit down, sit down, **(4)** please. **(6)** **(avg: 5.3)**
- c) No problem **(2)** – go on, go on. **(2)** Sit. **(0)** **(avg: 1.3)**
- d) **(0)** Stop. Stop. **(0)** Don't call the police. **(0)** **(avg: 0)**
- e) Something something **(0)** please **(6)** (trying to get her to stay.) **(2)** **(avg: 2.7)**
- f) Stop thank you wait **(0)** **(0)** please. **(6)** **(avg: 2)**

Average: 2.4

Video:

- a) No, it's not a bother. **(4)** Please **(6)** take a seat. **(0)** **(avg: 3.3)**
- b) Not a problem, **(2)** take a seat **(0)** please. **(6)** **(avg: 2.7)**
- c) You're not bothering me. **(5)** Come in, come in. **(6)** **(0)** **(avg: 3.7)**
- d) It's no problem, **(2)** come in. **(6)** **(0)** **(avg: 2.7)**
- e) Please **(6)** come in, **(6)** I was expecting you, but **(1)** --- he's too close to her spatially and she is more excited than the situation warrants. **(avg: 4.3)**
- f) No, you're not bothering me at all. **(6)** Come in, **(6)** please. **(6)** **(avg: 6)**

Average: 3.8

Dawn: Really – I think I have the wrong place.

5. Don: Da rroongplatz? Oop da-doll! Du doppa da rektplatz! Da-meetcha playzeer.
Comintern. Police. Plop da chah. [The wrong place? Not at all! You have the right place!
Pleasure to meet you. Come in. Please. Have a seat/pull up the chair.]

Text:

- a) The wrong place? (6) No my darling. (3) You have the right place! (6) Something plays here. (0) Come inside. (6) Please. (6) Have a seat in the chair. (6) (avg: 4.7)
- b) The wrong place? (6) Oh no! (4) This is the right place. (4) The meeting place is here. (0) Come in. (6) Please. (6) Pull up the chair. (6) (avg: 4.5)
- c) The wrong place? (6) ---! (0) You came to the right place! (5) The – is here. (0) Come inside. (6) Please. (6) Pull up the chair. (6) (avg: 4.1)
- d) The wrong place? (6) Not at all! (6) You came to the right place! (5) Nice to meet you. (5) Come in. (6) Please (6) pull up a chair. (6) (avg: 5)
- e) The wrong place? (6) Wait a second. (0) You are in the right place! (5) The right place is here. (0) (0) (0) Plop in the chair. (6) (avg: 2.4)
- f) The wrong place? (6) Not at all. (6) You stopped at the right place. (5) Pleasure to meet you. (6) Come in here. (6) Please. (6) Pull up a chair. (6) (avg: 5.8)

Average: 4.4

Audio:

- a) The wrong place? (6) No, (3) you are at the right place. (5) (0) Come in here, (6) (0) stay to chat. (1) (avg: 3)
- b) The wrong place! (6) No, (3) you came to the right place I assure you. (4) Come in (6) (0) and pull up a chair. (6) (avg: 3.6)
- c) (0) No, (3) you've come to the right place, (5) and we are very pleased (2) and welcome you. (0) (0) Please sit. (3) (avg: 1.9)
- d) (0) (0) (0) (0) (0) Please (6) take a seat. (6) (avg: 1.7)
- e) The wrong place? (6) (some exclamation) (0) pleasure to meet you. (6) (0) Please. (6) Sit down (?).(5) (avg: 3.3)
- f) ? (0) (0) (0) (0) (0) (0) (0) (0) (avg: 0)

Average: 2.2

Video:

- a) (0) (0) (0) ... Nice to meet you (6), (0) (0) take a seat. (6) (avg: 1.7)
- b) The wrong place? (6) (0) You've come to the right place. (0) Please to meet you. (0) (0) (0) Take a seat. (6) (avg: 1.7)
- c) The wrong place?! (6) (0) You have the right place. (6) It's a pleasure to meet you. (6) Come (4) (0) and sit. On this chair. (4) (avg: 3.7)
- d) The wrong place, (6) it's not the wrong place (2), (0) It's my pleasure, (3) (0) (0) sit down. (5) (avg: 2.3)
- e) (0) (0) (0) Good to meet you. (5) (0) (0) Plop your bottom here. (5) I'm sorry I put you off. Please stay, I am indeed Mr. Unamunda. Oooh. Maybe he isn't! But he'd like to talk to her anyway. (avg: 1.4)
- f) The wrong place? (6) Not at all! (6) This is the right place. (6) It's a pleasure to meet you. (6) Come in here (6), please (6). Take a seat. (6) (avg: 6)

Average: 2.8

Dawn: Well. Just for a second.

6. Don: (*cleaning up papers from the floor*) Squeegie la mezza. (*He points to a chair.*)
Zitz? [Excuse the mess. Sit?]

Text:

- a) Clean up the mess. **(3) (0) (avg: 1.5)**
- b) I'm cleaning up the mess. **(3) Sit? (0) (avg: 1.5)**
- c) Excuse the mess **(6)**. What's this? **(0) (avg: 3)**
- d) Excuse the mess. **(6) Sit. (6) (avg: 6)**
- e) I'm cleaning the floor. **(1) Sit? (6) (avg: 3.5)**
- f) Excuse the mess. **(6) Sit? (6) (avg: 6)**

Average: 3.6

Audio:

- a) Excuse me for a second **(3)**, sit. **(6) (avg: 4.5)**
- b) Excuse me a second. **(3) There. (0) (avg: 1.5)**
- c) So, tell me, is this your first time? **(0) (0) (avg: 0)**
- d) Sorry for the mess. **(5) (0) (avg: 2.5)**
- e) 'Scuse the mess. **(6) Sit. (6) (avg: 6)**
- f) Excellent (--)**(0) sit. (6) (avg: 3)**

Average: 2.9

Video:

- a) **(0) sit. (6) (avg: 3)**
- b) Thank you. **(0) Seat. (4) (avg: 2)**
- c) – **(0) (0) (avg: 0)**
- d) **(0) sit down(6) (avg: 3)**
- e) **(0) (he says) sit (in baby German). (6) (avg: 3)**
- f) Excuse the mess. **(6) Sit. (6) (avg: 6)**

Average: 2.8

Section II:

(Later in the same scene.)

Dawn: Well, it says- (*reading from a newspaper clipping*) “Learn Unamunda, the universal language.”

7. Don: Lick Unamunda, da linkwa looniversahl! [Learn Unamunda, the universal language.]

Text:

- a) Learn Unamunda, the language universal! (6)
- b) Learn Unamunda, the universal language! (6)
- c) It's Unamunda, the universal link! (4)
- d) Learn Unamunda, the language universal (6)
- e) Learn Unamunda, the universal language! (6)
- f) Learn Unamunda, the universal language! (or link!) (6)

Average: 5.7

Audio:

- a) Learn Unamunda, the universal language. (6)
- b) Learn Unamunda, the language universal (6)
- c) 'lik Unumunda, da langue universal' ("Learn Unamunda, the universal language") (5)
- d) Learn Unamunda, the universal language. (6)
- e) Like Unamunda, the universal language. (5)
- f) Learn Unamunda, the universal language. (6)

Average: 5.7

Video:

- a) Learn Unamunda. A universal language. (6)
- b) Learn Unamunda, the universal language. (6)
- c) Learn Unamunda, the universal language. (6)
- d) Learn Unamunda, the universal language. (6)
- e) He repeats what she says in Unamunda (a teaching device). (6)
- f) Learn Unamunda, the universal language (6)

Average: 6

Dawn: "The language that will unite all humankind."

8. Don: Da linkwa het barf oonidevairsify alla da peepholes enda voold. (Dawn raises her hand.) Quisling? [The language that will unite all the peoples of the world. Question?]

Text:

- a) The language that will unite all the people in the world. (6) Question? (6) (avg: 6)
- b) The language that will unite all humankind. (Lit.: All the peoples of the world.) (6) Question? (6) (avg: 6)
- c) The language that will unite all the people in the world. (6) Question? (6) (avg: 6)
- d) The language that will unite all the people of the world. (6) Question? (6) (avg: 6)
- e) The language that will universify all the peoples in the world. (5) Question? (6) (avg: 5.5)
- f) The language that will unite all the people of the world. (6) Question? (6) (avg: 6)

Average: 5.9

Audio:

- a) The language that will bring together all the peoples of the world. **(5) (0) (avg: 2.5)**
- b) The language that will unite all the different peoples of the world. **(5) (0) (avg: 2.5)**
- c) The language that will unify all the people in the world. **(6) Yes? (3) (avg: 4.5)**
- d) The language that will undiversify all the people in the world. **(4) Question? (6) (avg: 5)**
- e) The language that will university (?) [arrow to 'unify' above] all the peoples of the world. **(4) Question? (6) (avg: 5)**
- f) The language that will unite all the people in the world. **(6) Question? (6) (avg: 6)**

Average: 4.3

Video:

- a) A language that will unite diverse people of the world. **(5) (0) (avg: 2.5)**
- b) the language learnt at birth diversifies every person and the culture. **(2) Question? (6) (avg: 4)**
- c) The language that will unify all the peoples. **(5) Question? (6) (avg: 5.5)**
- d) The language that will unite all humankind. **(6) (0) (avg: 3)**
- e) He repeats this in Unamunda **(6)** and adds a bit which she doesn't understand, **(0)** so she raises her hand. **(avg: 3)**
- f) The language that will unify all the people in the world. **(6) Question? (6) (avg: 6)**

Average: 4

Dawn: Do you speak English?

9. Don: Johncleese? Squeegie, squeegie. Alaska, iago parladoop johncleese. [English? Excuse me, excuse me. Alas, I don't speak English.]

Text:

- a) English? **(6)** Clean, clean. **(0)** Alaska, igloo somethin somethin. **(0) (avg: 2)**
- b) English? **(6)** Sure, sure. **(0)** I'll ask you (?), I do speak English. **(2) (avg: 2.7)**
- c) English? **(6)** Sorry, sorry. **(6)** I'll ask her, --- English. **(1) (avg: 4.3)**
- d) English? **(6)** Excuse me, excuse me. **(6)** Yes, I speak English. **(2) (avg: 4.7)**
- e) John Cleese? **(0)** Yes, yes, **(0)** I really love John Cleese. **(0) (avg: 0)**
- f) English? **(6)** Excuse me, excuse me. **(6)** I speak a bit of English. ["Alas, I don't speak a drop of English" crossed out.] **(4) (avg: 5.3)**

Average: 3.2

Audio:

- a) **(?)(0)** Excuse me, excuse me, **(6)** (no idea) **(0) (avg: 2)**
- b) **(0) (0)** Yes, but only when I must. **(0) (avg: 0)**
- c) **(0)** Yes, I do, of course of course, **(0)** I was born in Alaska. **(0) (avg: 0)**

- d) – **(0) (0) (0) (avg: 0)**
- e) Dawn please. **(0)** Scuse me, scuse me. **(6)** (not sure what he’s trying to say here.)
(0) (avg: 2)
- f) English **(6)** let’ see, let’s see. **(0)** Alas (--) English. **(2) (avg: 2.7)**

Average: 1.1

Video:

- a) Like John Cleese? **(0) (0)** No, not like him. **(1) (avg: 0.3)**
- b) Me, English? **(5)** I’m sorry, sorry. **(4)** I do not speak that I’m afraid. **(4) (avg: 4.3)**
- c) – **(0) (0) (0) (avg: 0)**
- d) **(0)** No, alas, **(6)** I do not speak English. **(6) (avg: 4)**
- e) **(0) (0)** No, alas, not at all (squeegee). **(4)** But I’ve only been in the US for a week.
(avg: 1.3)
- f) English? **(6)** (or Yankee-ese?) English? Excuse me, excuse me, **(6)** no, I don’t
speak English. **(6) (avg: 6)**

Average: 2.7

Section III:

(Later in the same scene.)

Dawn: You know, it’s strange how much I understand.

10. Don: Natoraltissimississippi^{mentay}! Linkwa, pink dama, arf armoneea. *Moozheek*. Rintintinnabulation! Epp Unamunda arf da melodeea looniversahl! Porky alla da peepholes enda vooold – alla de peepholes enda looniverse cargo a shlong enda hartz.

Epp det shlong arf ... Unamunda! [Naturally! Language, sweet lady, is harmony. Music. And Unamunda is the universal melody. Because all the people in the world – all the people in the universe carry a song in their hearts. And that song is... Unamunda!]

Text:

- a) Natural Mississippi mentality! **(2)** – **(0)** Music. **(6)** **(0)** He says something about the people of the universe learning Unamunda. **(1)** All of the people in the universe carry a song in their hearts **(avg: 4)** and that song is Unamunda. **(4)** **(avg: 2.5)**
- b) Naturally! **(6)** Language, [?], is harmony. **(5)** Music. **(6)** Rhythm! **(2)** And Unamunda is the universal melody! **(6)** Because all the people in the world – all the people in the universe carry a song in their hearts. **(6)** And that song is... Unamunda! **(6)** **(avg: 5.3)**
- c) Naturally! **(6)** Link, think drama, have harmony. **(1)** Music. **(6)** ----! **(0)** Unamunda is the universal melody! **(6)** For all the people in the world – all the people in the universe carry song in their hearts. **(6)** This song is... Unamunda! **(6)** **(avg: 4.4)**
- d) Naturally! **(6)** Language, of course, is harmony. **(5)** Music. **(6)** **(0)** Unamunda is the universal melody. **(6)** All of the people in the world – all of the people in the universe carry a song in their hearts. **(6)** Yes that song in Unamunda. **(5)** **(avg: 4.9)**
- e) Naturally! **(6)** Language, **(1)** Music. **(6)** Reasons for celebration! **(0)** Especially Unamunda is the universal melody. **(5)** Therefore, all the people in the world, all the people in the entire universe should live in harmony. **(3)** Especially the life of Unamunda! **(1)** **(avg: 3.1)**
- f) Naturally! **(6)** Language, my dear, is harmony. **(6)** Music. **(6)** (“rintintin...?") **(0)** Unamunda has a universal melody. **(5)** Because all the people in the world – all the people in the universe carry a song in their hearts. **(6)** And that song is... Unamunda. **(6)** **(avg: 5)**

Average: 4.2

Audio:

- a) Naturally. **(6)** The language is about harmony, **(4)** music, **(6)** tintinnabulation (ringing of bells). **(6)** Unamunda is a universal melody, **(5)** because all the people in the world, all the people in the universe all have a song in their hearts, **(6)** and that song is called Unamunda. **(6)** **(avg: 5.6)**
- b) No, it's not strange. **(3)** Like the harmony **(2)** and melody in music. **(3)** Unamunda is the universal melody **(6)** (for all the peoples in the world). All the peoples in the universe know how to make art **(3)** and that great art is Unamunda. **(3)** **(avg: 2.9)**
- c) **(0)** The language is very simple, and it's very rich also. **(1)** It's a language of arts, music, **(2)** and it creates harmony, **(2)** **(0)** because all the people in the world, all the people in the universe share the same goals, **(3)** and that's why we should all learn Unamunda. **(0)** **(avg: 1.1)**

- d) That is the purpose of the language. **(0)** The language of harmony, **(3)** like music. **(4)** **(0)** The universal melody. **(4)** For all people in the world. The people of the universe carry a song in their hearts **(6)** that is the same. **(2)** **(avg: 2.7)**
- e) Naturally, **(6)** languages are harmonious, **(4)** music, **(6)** rin-tin-tin (??) **(0)** Unamunda – the universal melody, **(4)** all the peoples in the world, all the people in the universe, (not sure) **(3)** **(0)** **(avg: 3.3)**
- f) (He’s talking about pronunciation). **(0)** **(0)** Unamunda is the universal music something. **(3)** **(1)** He’s going to teach everyone Unamunda. **(1)** **(0)** **(avg: 0.9)**

Average: 2.8

Video:

- a) Now that’s wonderful! **(0)** **(0)** It can help with music and comedy. **(1)** **(0)** **(0)** All of the people in the world will hold it dear in their hearts. **(3)** And we will all get along well. **(0)** **(avg: 0.6)**
- b) That can be explained easily. **(2)** The Unamunda language is harmony, **(4)** music...**(6)** **(0)** Unamunda is the universal melody **(6)** because all of the people in the world, all of the people in the universe, carry a connection in their hearts, **(5)** and that connection is Unamunda. **(4)** **(avg: 3.9)**
- c) It’s simple. **(4)** It’s the harmony language. **(4)** **(0)** **(0)** It will unite all of the people in the universe. **(1)** All of the people and their hearts. **(2)** To create one world. **(0)** (He’s describing to Dawn how the language will serve to unite all peoples due to its simplicity.) **(avg: 1.6)**
- d) It is not hard. **(0)** It is the language of harmony, **(4)** **(0)** **(0)** the melody of the universe. **(4)** Everyone has love in their hearts, **(1)** that’s Unamunda. **(2)** **(avg: 1.6)**
- e) There, you see! **(3)** It’s just like music! **(4)** Harmony (in principle). **(2)** Tintinnabulation. **(6)** (A 50-year-old would recognize the dog’s bark in that one). Unamunda is a universal language **(4)** – if all the people in the universe would speak Unamunda, it would bring us peace – like Esperanto! **(2)** **(0)** **(avg: 3)**
- f) Naturally. **(6)** Language is a kind of harmony. **(5)** The music, **(6)** the rhythm, **(2)** the melody is universal. **(4)** For all the people in the world, no! all the people in the universe carry the same things in their hearts: **(5)** this is the origin of Unamunda. **(1)** **(avg: 4.1)**

Average: 2.5

Section IV:

(Later in the same scene.)

11. Don: Arf raddy? [Are you ready?]

Text:

- a) Are you ready? **(6)**
- b) Are you ready? **(6)**
- c) Are you ready? **(6)**
- d) Are you ready? **(6)**
- e) Are you ready? **(6)**
- f) Are you ready. **(6)**

Average: 6

Audio:

- a) Are you ready? **(6)**
- b) Are you ready? **(6)**
- c) Are you ready? **(6)**
- d) Are you radelly? **(3)**
- e) Are you ready? **(6)**
- f) Are you ready? **(6)**

Average: 5.5

Video:

- a) You are raddly? **(2)**
- b) Are you ready? **(6)**
- c) Are you raddly? **(3)**
- d) Are you raddly **(3)**
- e) So let's begin. This is how we'll do it. Relax. Are you relaxed? **(3)**
- f) Are you ready? **(6)**

Average: 3.8

Dawn: Yes. I'm raddly.

12. Don: Raza la *tabooli*. *Konsentreeren*. Lax da hoover, lax da hoover. Epp echo mi. [Clear your mind. Concentrate. Relax your mouth, relax your mouth. And repeat after me.]

Text:

- a) Razzle your butt. **(1)** Concentrate. **(6)** Like the hoover, like the hoover. **(1) (0)**
(avg: 2)
- b) Raise the [?]. **(1)** Concentrate. **(6)** Relax the mouth (?), relax the mouth. **(6)** And echo me (or imitate) **(6)** **(avg: 4.8)**
- c) Read the table. **(1)** Concentrate. **(6) (0) (0)** **(avg: 1.8)**
- d) Clear the slate (tabula rasa). **(6)** Concentrate. **(6)** Relax all over. **(4)** Repeat after me. **(6)** **(avg: 5.5)**
- e) Take a deep breath. **(0)** Concentrate. **(6)** Relax the mind, relax the mind, **(4)** now echo me! **(6)** **(avg: 4)**
- f) Raise your eyes/hand/head! **(1)** Concentrate. **(6)** Relax your mouth, relax your mouth. **(6)** And repeat after me (echo). **(6)** **(avg: 4.8)**

Average: 3.8

Audio:

- a) ?? (0) concentrate (6)?? (0) (repeat after me)? (6) Not sure, could be “lets go” instead. (avg: 3)
- b) Ready to go, ready to go. (0) Let’s begin right here. (0) (0) Now, copy me. (6) (avg: 1.5)
- c) Always ready, always ready, (0) excellent. (0) Let’s begin, let’s begin. (0) Follow me. (3) (avg: 0.8)
- d) (0) (0) Listen closely, listen closely. (0) Repeat after me. (6) (Trying to instruct Dawn in Unamunda.) (avg: 1.5)
- e) (Ready yourself.) (2) Concentrate. (6) Relax your head (?), (4) repeat after me...(6) (avg: 4.5)
- f) (0) Concentrate, (6) relax the something, (4) copy me. (6) (avg: 4)

Average: 2.6

Video:

- a) Ready. (0) Think with your head. (0) Relax your muscles. (4) Repeat after me. (6) (avg: 2.5)
- b) Clear your brain, clear your brain. (6) Concentrate. (6) Relax your mouth, relax your mouth (6) and repeat after me. (6) (avg: 6)
- c) ... (0) Concentrate. (6) Relax the muscles/mouth/jaw. (5) Follow me/do as I do. (6) (avg: 4.3)
- d) Rack your brain, (2) concentrate, (6) relax your mouth, (6) repeat after me. (6) (avg: 5)
- e) (0) (0) Copy me. (6) Put your hands by your jaw and release the jaw, soften the tongue. (3) (avg: 2.3)
- f) Focus the mind, focus the mind. (5) Concentrate. (6) Relax the face, relax the face. (4) (0) (avg: 3.8)

Average: 4

Section V:

(Later in the same scene.)

13. Dawn: Lassmi getmi geld fonda handberger. [Let me get my money from my handbag.]

Text:

- a) Let me get the money for the hamburger. (4)
- b) Let me get my money from my handbag. (6)
- c) Let me get my money from my handbag. (6)
- d) Let me get money from my handbag. (5)
- e) Let's go get a hamburger. (2)
- f) Let me get my gold for the hamburger. (3)

Average: 4.3

Audio:

- a) lots of ? on the hamburger. (0)
- b) Let's go get a hamburger. (2)
- c) How much does a hamburger cost? (0)
- d) Do you know what a "handberger" is? (0)
- e) (Something about money maybe?) not sure. (1)
- f) May I please have a hamburger. (0)

Average: 0.5

Video:

- a) Let me give you some money from my purse. (5)
- b) Let me get my money from my purse. (6)
- c) She's attempting to pay him. (2)
- d) I'm full from the hamburger. (0)
- e) She's now speaking with confidence in Unamunda and she's telling him a story. About lunch. (0)
- f) I have it in my handbag. (3)

Average: 2.7

Don: Handberger?

14. Dawn: (*Holding up her purse.*) Handberger. (*Holding out money.*) Dots alla da geld ya doppa mit mi. Cheer. Melgibson da rest enda morgen. [My handbag. That's all the money I have with me. Here. I'll give you the rest in the morning.]

Text:

- a) (0) That's all the money I have with me. (6) Yay. (0) – the rest in the morning. (5) (avg: 2.8)
- b) Handbag. (6) That's all the money I've got with me. (6) Here. (6) I'll give you the rest in the morning. (6) (avg: 6)
- c) Handbag. (6) This is all the money that I have with me. (6) (0) (0) (avg: 3)
- d) Handbag. (6) That's all of the money you're gonna get from me. (5) Here. (6) I'll give you the rest in the morning. (6) (avg: 5.8)
- e) Hamburger. (0) That should be enough to get the same as me. (0) Enjoy! (0) I'll eat the rest of mine in the morning. (3) (avg: 0.8)
- f) Hamburger. (0) That;s a lot of gold you haven't given me. (2) No problem. (0) (Cheers.) Give me the rest in the morning. (4) (Can't tell if it's money/gold for/from Don/someone else.) (avg: 1.5)

Average: 3.1

Audio:

- a) **(0)** That's all the \$ I have on me. **(6)** Here, **(6)** at Mel Gibson (?). **(0)** **(avg: 3)**
- b) Hamburger. **(0)** That's all the money I have with me. **(6)** But here, **(6)** I'll give you the rest in the morning. **(6)** **(avg: 4.5)**
- c) Hamburger. **(0)** This is all the money I have. **(5)** **(0)** I'll give you the rest next morning. **(5)** **(avg: 2.5)**
- d) **(0)** This is all the money I need to eat this week. **(2)** **(0)** **(0)** **(avg: 0.5)**
- e) **(0)** That's all the money you've given me, **(4)** right here...**(6)** **(0)** **(avg: 2.5)**
- f) **(0)** That's all of the money I have with me, **(6)** here **(6)** I'll give you the rest tomorrow. **(4)** **(avg: 4)**

Average: 2.8

Video:

- a) **(0)** That's all I have. **(3)** Use it, **(0)** and get some rest for the morning. **(2)** **(avg: 1.3)**
- b) **(0)** That's all I have right now. **(3)** Here, **(6)** I'll pay you the rest later. **(3)** **(avg: 3)**
- c) **(0)** Mentions something about how much she can afford and how she feels that she can pay him. **(1)** **(0)** **(1)** **(avg: 0.5)**
- d) **(0)** That's all I have, **(4)** here. **(6)** **(0)** **(avg: 2.5)**
- e) **(0)** She says, of course. Since he's only been in the US a week, he doesn't know what that is, or that you have to go to the Big Whopper to get one. She says there's one right near by. **(0)** **(0)** **(0)** **(avg: 0)**
- f) **(0)** This is all I have with me now. **(4)** Here. **(6)** Mel Gibson is over there. **(0)** **(avg: 2.5)**

Average: 1.6

Section VI:

(Later in the same scene.)

15. Dawn: Iago arf amorphous mit du. [I'm in love with you.]

Text:

- a) I go – with you. **(2)**

- b) I'm amorphous with you. **(3)**
- c) I am in love with you. **(6)**
- d) I am (one)? with you. (Are they falling in love?) **(4)**
- e) I'm in love with you. **(6)**
- f) I am in love with you. **(6)**

Average: 4.5

Audio:

- a) Everything's different. **(0)**
- b) Thank you so very much. **(0)**
- c) I would like to have children in the future. **(1)**
- d) This is a big change. **(0)**
- e) (She wants to do something with him) **(2)**
- f) Something something changing with you. **(1)**

Average: 0.5

Video:

- a) I think I love you. **(5)**
- b) I am very glad to meet you. **(2)**
- c) – **(0)**
- d) no idea? **(0)**
- e) I really would like to get to know you better. (She smiles and puts her hand on his.) **(2)**
- f) I'm in love with you. **(6)**

Average: 2.5

16. Don: Amorphous? [In love?]

Text:

- a) Amorphous? **(0)**
- b) Amorphous? **(0)**
- c) In love? **(6)**
- d) One? **(0)**
- e) In love? **(6)**
- f) In love? **(6)**

Average: 3

Audio:

- a) different! **(0)**
- b) Thanks? **(0)**
- c) Children? **(0)**
- d) A change? **(0)**
- e) ? (not sure at all) **(0)**
- f) Changing **(0)**

Average: 0

Video:

- a) Love me? **(5)**
- b) Glad? **(3)**
- c) – **(0)**
- d) – **(0)**
- e) He's after all from Unamunda (country = language) – that place – universe – is unisex. He understands “amorphous” as “anything”, **(0)** “anywhere” and she pursues (“polymorphous”) meaning, yes, I do, very much.
- f) In love? **(6)**

Average: 2.3

17. Dawn: Polymorphous. [Head over heels].

(Complete credit given for intensifying answer given in VI.1. “different”, “very different” gets a 6 here, as does “in love”, “very much in love”.)

Text:

- a) A lot of amorphous. **(6)**
- b) Polymorphous. **(0)**
- c) Very much in love. **(6)**
- d) ? **(0)**
- e) Really in love. **(6)**
- f) Completely in love. **(6)**

Average: 4

Audio:

- a) Very different. **(6)**
- b) Many thanks. **(6)**
- c) Many children. **(6)**
- d) More than one change. **(6)**
- e) ? (not sure at all) **(0)**
- f) Changing. **(0)**

Average: 4

Video:

- a) Really love you. **(6)**
- b) Very glad. **(6)**
- c) – **(0)**
- d) –**(0)**
- e) [see previous answer] **(6)**
- f) Paul, I love you. **(0)**

Average: 3

18. Don: Verismo? [Really?]

Text:

- a) Who is mo? **(0)**
- b) Really? **(6)**
- c) Really? **(6)**
- d) Really? **(6)**
- e) You sure? **(5)**
- f) Really? **(6)**

Average: 4.8

Audio:

- a) Seriously. **(6)**
- b) You are happy? **(0)**
- c) That would be a lot of work for you. **(0)**
- d) Are you serious? **(6)**
- e) For real? **(6)**
- f) (question) **(0)**

Average: 3

Video:

- a) Really really? **(6)**
- b) Really? **(6)**
- c) – **(0)**
- d) for real. **(6)**
- e) Do you really mean it? **(6)**
- f) Really? **(6)**

Average: 5

19. Dawn: Surrealismo. [And truly.]

Text:

- a) Surreal is mo. **(0)**
- b) Absolutely. **(6)**
- c) Kind of. **(0)**
- d) Yes really. **(6)**
- e) Surely. **(6)**
- f) Absolutely. **(6)**

Average: 4

Audio:

- a) Very seriously. **(6)**
- b) Very happy! **(6)**
- c) Yes, but that would make me very happy. **(1)**
- d) Very serious. **(6)**
- e) Sure**(4)**
- f) I'm going now. **(0)**

Average: 3.8

Video:

- a) Retmidly. **(0)**
- b) Surreal. **(0)**
- c) Dawn is either thanking him or declaring her admiration for Don. I have no idea what she or he is saying. **(2)**
- d) – **(0)**
- e) Do I ever! **(6)**
- f) Truly. **(6)**

Average: 2.3

Questions:

(For questions 1-3, the audio and visual groups did not have access to the spelling of words, so answers phonologically very similar to the correct answer were given a 6, for example “lingua” or “lengua” for “linkwa”. In question 3 in particular, the actors pronounced “peepholes” in the recording as something much closer to “peoples”, so that answer was granted a 6. Points given decrease with lessening phonological similarity to the correct answer.)

1) What is the Unamunda word for “have”? [Doppa]

Text:

- a) Doppa (6)
- b) Doppa (6)
- c) Doppa (6)
- d) don't remember (0)
- e) don't think I translated “have” in any of the sentences. (0)
- f) Arf? (0)

Average: 3

Audio:

- a) – (0)
- b) – (0)
- c) – (0)
- d) – (0)
- e) – (0)
- f) hab (0)

Average: 0

Video:

- a) – (0)
- b) – (0)
- c) – (0)
- d) – (0)
- e) Velcro (0)
- f) carri (0)

Average: 0

2) What is the Unamunda word for “language”? [linkwa]

Text:

- a) linkwa (6)
- b) linkwa (6)
- c) – (0)
- d) linkwa (6)
- e) linka (5)
- f) linkwa? (6)

Average: 4.8

Audio:

- a) song (0)
- b) linguas (5)
- c) langue (4)

- d) looguli (2)
- e) lengua (6)
- f) lingua (6)

Average: 3.8

Video:

- a) lingual (5)
- b) lingua (6)
- c) lengua (6)
- d) – (0)
- e) Unamunda (1)
- f) narf (0)

Average: 3

3) What is the Unamunda word for “people”? [peepholes]

Text:

- a) – (0)
- b) peepholes (6)
- c) peoples --- (6)
- d) peephols (or something) (6)
- e) popple (4)
- f) peepo (4)

Average: 4.3

Audio:

- a) peoples (6)
- b) peopels (6)
- c) peoples (6)
- d) pupooli (2)
- e) peoples (6)
- f) ooffle? (0)

Average: 4.3

Video:

- a) – (0)
- b) people (5)
- c) peoples (6)
- d) people (5)
- e) havarti (0)
- f) volks (0)

Average: 2.7

4) If you were to create an Unamunda word meaning “seatbelt”, what would it be? (In a line not used in this experiment, Ives uses “zitzbells” to mean “seatbelt”.)

Text:

- a) setzconveyer
- b) seedbelden
- c) holdensilla
- d) beatheld
- e) sibilt
- f) bells seets

Audio:

- a) eatbelt
- b) strappesafet
- c) vintes
- d) suutobulooto
- e) sitze-felt
- f) meatfelt?

Video:

- a) sealbook
- b) –
- c) –
- d) setbout
- e) durmatto
- f) –

5) Is English your first language? If not, what is?

Text:

- a) yes
- b) yes
- c) yes
- d) yes.
- e) yes.
- f) yes

Audio:

- a) yes
- b) yes
- c) no, Spanish
- d) yes
- e) yes
- f) yes

Video:

- a) yes
- b) no – Spanish

- c) I learned Spanish before English, but I consider myself having learned both simultaneously.
- d) yes
- e) yes
- f) yes

6) Have you ever studied French, Spanish, Italian, Latin, or German? If so, for how long?

Text:

- a) German – 4 years
- b) Spanish – 4 years; Latin – 6 years
- c) Spanish – 6 years
- d) French – 5 years; Latin – 1 ½ years.
- e) Spanish – 6 years
- f) French – 1 year; Spanish – 3 years

Audio:

- a) Spanish – 4 years
- b) Latin – 5 years; intensive Italian – 1 month
- c) German – 3 years
- d) Spanish – 5 years
- e) Spanish – used to speak it fairly fluently as a child then forgot it, 2 years at college; German - ~ 7 years classes in school/college
- f) Latin – 4 courses, 2 seminars

Video:

- a) French – 6 years
- b) Spanish – native speaker; French – 3 years
- c) Spanish – 5 years (in school)
- d) French – 3 years
- e) French – bilingual; Spanish – NYC street; Italian – 3 years; Latin – 6 years; German – home language
- f) Spanish – 3 years; Latin – 1 year

7) Do you enjoy puns? Do your friends or family enjoy making puns?

Text:

- a) yes and yes
- b) yes, both
- c) Yes, I do enjoy making puns. My friends/family don't really.
- d) Yes
- e) Nope, nope.
- f) Yes; yes but they're usually bad.

Audio:

- a) yes
- b) I groan but enjoy them. My mother loves making puns.
- c) Not really – no
- d) It depends. Not in my experience.
- e) Yes!! Friends yes, family no.
- f) Yes, yes

Video:

- a) sometimes
- b) yes, yes but not often
- c) Yeah, I enjoy puns. My friends enjoy making puns.
- d) I guess; yes
- e) yes, yes
- f) -

8) Please rate the difficulty of this exercise:

Text:

- a) 5
- b) 7
- c) 8
- d) 7
- e) 8
- f) 3

Average: 6

Audio:

- a) 8
- b) 7
- c) 6
- d) 7
- e) 7
- f) 5

Average: 7

Video:

- a) 7
- b) 8
- c) 6
- d) 7
- e) 1 – enjoyable
- f) 7

Average: 6

9) Time taken:

Text:

- a) 20 min
- b) 20 min
- c) 20 min
- d) 40 min
- e) 30 min
- f) 45 min

Average: 29 min

Audio:

- a) 10 min
- b) 25 min
- c) 25 min
- d) 20 min
- e) 15 min
- f) 15 min

Average: 18 min

Video:

- a) 10 min
- b) 15 min
- c) 15 min
- d) 10 min
- e) 15 min
- f) 10 min

Average: 13 min

Average scores:

(Calculated by averaging the subject's average score for each line in the experiment and do not include the three "What is the word for" questions at the end. Group averages obtained by averaging the group averages for each line in the experiment.)

Text:

- a) 3.2
- b) 4.3
- c) 4.1
- d) 4.6
- e) 4.2
- f) 4.9

Group average: 4.2

Audio:

- a) 3.3
- b) 2.9
- c) 1.8
- d) 2.6
- e) 3.5
- f) 2.3

Group average: 2.7

Video:

- a) 3.3
- b) 3.8
- c) 2.1
- d) 2.3
- e) 2.7
- f) 4.1

Group average: 3.1

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