

Appendix S1: Test stimuli used in the experiments

This appendix contains the test stimuli used in the experiments. Morpheme boundaries have been delimited for ease of reading, although written Quichua does not delimit morphemes in this fashion.

Stimulus	Experiment #1	Experiment #2	Experiment #3
QUICHUA			
mana hatu-shpa shamu-rka-nchik 'We came without selling [anything]'	X		X
wawa-kuna-ta na chari-ni-chu 'I don't have any children'	X		X
ñuka-ka kichwa-ta na rima-ni-chu 'I don't speak Quichua'	X	X	X
na chari-ni-chu wawa-kuna-ta 'I don't have children'			X
punda-kuna-ka iskwila na tiya-rka-chu 'In past times there were no schools'			X
uchila ka-shpa-ka may-pi-tak kausa-rka-ngi? 'When you were young, where did you live?'	X	X	X
kichwa-ta yacha-hu-ngapa muna-ni 'I want to learn Quichua'	X	X	X
mashna churi-kuna-ta chari-ngi? 'How many children do you have?'	X	X	X
may-pi-tak kausa-ngi? 'Where do you live?'	X	X	X
kan-ka may-pi-tak yanka-ngi? 'Where do you work?'			X
ñukanchik-ka Utabalu-pi kausa-nchik 'We live in Otavalo'	X	X	X
wawa-kuna shamu-ngichi puñu-ngapa 'Children, come in and go to bed'	X	X	X

pay-ka rigsi-wa-n 'He/she knows me'	X	X	X
pay-ka ñuka-ta rigsi-n 'He/she knows me'	X		X
Gabriel-pak wasi-pi-mi kausa-ni 'I live in Gabriel's house'	X	X	X
ima rura-shpa-tak wasi-man shamu-rka-ngi? 'Why did you come home?'	X		X
ima rura-shpa-tak macha-shka puri-hu-ngi? 'Why are you wandering around drunk?'	X	X	X
ima-ta tak rura-jungi? 'What are you doing?'	X	X	X
na miku-nayan-chu '[I] don't want to eat'	X	X	X
ima-ta tak tarpu-rka-ngi? 'What did you plant?'	X	X	X
urku-pi-ka animal-kuna-ka tiya-n 'There are animals in the mountains'		X	X
ñuka-ka kay-pi partera-kuna-wan nazi-shka-ni-mi 'I was born here with a midwife'			X
ñuka mamita-ka María-mi kan 'My mother is María'			X
kan-pak mamita-ka may-pi-tak nasi-rka? 'Where was your mother born?'			X
kuy-kuna-ka hiwa-ta miku-n ' <i>cuy</i> s [Guinea pigs] eat grass'			X
yama-ta michi-hu-ngui 'I am taking the sheep to pasture'			X
kayna-ka may-man-tak ri-rka-ngui 'where did you go yesterday?'			X

MEDIA LENGUA

wawa-kuna bini-ngichi durmi-ngapa `Children, come in and go to bed`	X	X	X
ihu-kuna-ta nu tini-ni-chu `I don't have any children`	X	X	X
nu tini-ni-chu ihu-kuna-ta `I don't have children`			X
isi tiempo-pi-ka iskwila nu abi-rka-chu `In past times there were no schools`	X	X	X
kichwa-ta aprindi-ngapa kiri-ni `I want to learn Quichua`	X	X	X
chikitu ka-shpa-ka undi-pi-tak bibi-rka-ngi? `When you were young, where did you live?`	X	X	X
kwantu ihu-kuna-ta tini-ngi? `How many children do you have?`	X	X	X
undi-pi-tak bibi-ngi? `Where do you live?`	X	X	X
bus-ka undi-pi-tak bibi-ngi? `Where do you live?`			X
nutru-ka Utavalu-pi bibi-nchik `We live in Otavalo`	X	X	X
il-ka miu-ta kunuzi-n `He/she knows me`	X	X	X
il-ka yu-ta kunuzi-n `He/she knows me`	X		X
il-ka kunuzi-wa-n `He/she knows me`	X	X	X
inki-ta tak azi-hu-ngi? `What are you doing?`	X	X	X
Biktur-pak kaza-pi-mi bibi-ni `I live in Victor's house`	X	X	X
inki azi-shpa-tak kaza-man bini-rka-ngi? `Why did you come home?`	X	X	X
inki azi-shpa-tak chuma-shka anda-hu-ngi?	X	X	X

`Why are you wandering around drunk? nu kumi-nayan-chu	X	X	X
`[I] don't want to eat' inki-ta tak sembra-rka-ngi?	X	X	X
`What did you plant?' nu kumpra-shpa bini-rka-nchik	X	X	X
`We came without buying [anything]' yu-ka kichwa-ta nu abla-ni-chu	X		X
`I don't speak Quichua' sirru-pi-ka animal-kuna-ka abi-n	X	X	X
`There are animals in the mountains' miu mamita-ka María-mi kan			X
`My mother is María' bus-pak mamita-ka may-pi-tak nasi-rka?			X
`Where was your mother born?' yu-ka aki-pi partera-kuna-wan nazi-shka-ni-mi			X
`I was born here with a midwife' amigu-kuna-ka aki-man bini-hu-n			X
`the friends are coming here'			

MIXED

yu-ka kichwa-ta nu usha-ni-chu	X	X	X
`I don't speak Quichua' yu-ka kichwa-ta na abla-ni-chu	X	X	X
`I don't speak Quichua' ñuka-ka kichwa-ta na pudi-ni-chu			X
`I don't speak Quichua' mana hatu-shpa bini-rka-nchik	X		X
`We came without selling [anything]' mana bindi-shpa shamu-rka-nchik	X		X
`We came without selling [anything]' mana kumpra-shpa bini-rka-nchik	X		X

'We came without buying [anything]'			
nu randi-shpa shamu-rka-nchik	X		X
'We came without buying [anything]'			
nu randi-shpa bini-rka-nchik	X		X
'We came without buying [anything]'			
nu bindi-shpa shamu-rka-nchik	X		X
'We came without selling [anything]'			
churi-kuna-ta nu tini-ni-chu	X		X
'I don't have any children'			
wawa-kuna-ta nu chari-ni-chu	X	X	X
'I don't have any children'			
wawa-kuna-ta na tini-ni-chu	X		X
'I don't have any children'			
ihu-kuna-ta nu chari-ni-chu	X		X
'I don't have any children'			
ihu-kuna-ta na tini-ni-chu	X	X	X
'I don't have any children'			
ihu-kuna-ta na chari-ni-chu	X		X
'I don't have any children'			
na tini-ni-chu wawa-kuna-ta			X
'I don't have children'			
na tini-ni-chu ihu-kuna-ta			X
'I don't have children'			
nu tini-ni-chu wawa-kuna-ta			X
'I don't have children'			
nu chari-ni-chu wawa-kuna-ta u			X
'I don't have any children'			
nu chari-ni-chu ihu-kuna-ta			X
'I don't have any children'			
na chari-ni-chu ihu-kuna-ta			X
'I don't have any children'			
isi tiempo-pi-ka iskwila na abi-rka-chu	X		X
'In past times there were no schools'			

isi tiempo-pi-ka iskwila nu tiya-rka-chu `In past times there were no schools'	X	X	X
antis-ka Ibarra-pi yanka-rka-ni `In the past, I worked in Ibarra''	X		X
ñawpa-ka Kitu-pi trabaha-rka-ni `In the past I worked in Quito'	X		X
isi tiempo-pi-ka iskwila na tiya-rka-chu `In past times there were no schools'	X	X	X
punda-kuna-ka iskwila nu abi-rka-chu `In past times there were no schools'	X		X
punda-kuna-ka iskwila nu tiya-rka-chu `In past times there were no schools'	X		X
antis-ka traktur-ka na abi-rka-chu `In the past there were no tractors'	X		X
ñawpa pacha-pi-ka triyadura nu tiya-rka-chu `In past times there were no threshing machines'			X
punda-kuna-ka iskwila na abi-rka-chu `In past times there were no schools'	X	X	X
punda-kuna-ka iskwila na tiya-rka-chu `In past times there were no schools'	X		X
chikitu ka-shpa-ka may-pi-tak bibi-rka-ngi? `When you were young where did you live?	X	X	X
chikitu ka-shpa-ka undi-pi-tak kausa-rka-ngi? `When you were young where did you live?	X	X	X
chikitu ka-shpa-ka may-pi-tak kausa-rka-ngi? `When you were young where did you live?	X		X
uchila ka-shpa-ka undi-pi-tak bibi-rka-ngi? `When you were young where did you live?	X		X
uchila ka-shpa-ka may-pi-tak bibi-rka-ngi? `When you were young where did you live?	X	X	X
uchila ka-shpa-ka undi-pi-tak kausa-rka-ngi? `When you were young where did you live?	X	X	X
kichwa-ta yacha-hu-ngapa kiri-ni	X	X	X

`I want to learn Quichua' kichwa-ta aprindi-ngapa muna-ni	X		X
`I want to learn Quichua' kwantu churi-kuna-ta tini-ngi?	X		X
`How many children do you have?' kwantu ihu-kuna-ta chari-ngi?	X		X
`How many children do you have?' kwantu churi-kuna-ta chari-ngi?	X	X	X
`How many children do you have?' mashna ihu-kuna-ta tini-ngi?	X	X	X
`How many children do you have?' mashna churi-kuna-ta tini-ngi?	X		X
`How many children do you have?' mashna ihu-kuna-ta chari-ngi?	X		X
`How many children do you have?' sirru-pi-ka animal-kuna-ka tiya-n		X	X
`There are animals in the mountains' urku-pi-ka animal-kuna-ka abi-n	X	X	X
`There are animals in the mountains' wawa-kuna shamu-ngichi durmi-ngapa	X	X	X
`Children, come in and go to bed' wawa-kuna bini-ngichi puñu-ngapa	X	X	X
`Children, come in and go to bed' undi-pi-tak kausa-ngi?	X	X	X
`Where do you live?' may-pi-tak bibi-ngi?	X	X	X
`Where do you live?' kan-ka undi-pi-tak bibi-ngi?			X
`Where do you live?' kan-ka undi-pi-tak kausa-ngi?			X
`Where do you live?' kan-ka may-pi-tak bibi-ngi?			X
`Where do you live?' kan-ka may-pi-tak bibi-ngi?			X

bus-ka may-pi-tak bibi-ngi? `Where do you live?'				X
bus-ka may-pi-tak kausa-ngi? `Where do you live?'				X
bus-ka undi-pi-tak kausa-ngi? `Where do you live?'				X
nutru-ka Utabalu-pi kausa-nchik `We live in Otavalo'	X		X	X
ñukanchik-ka Utabalu-pi bibi-nchik `We live in Otavalo'	X		X	X
il-ka miu-ta rigsi-n `He/she knows me'	X		X	X
il-ka yu-ta rigsi-n `He/she knows me'	X		X	X
il-ka rigsi-wa-n `He/she knows me'	X		X	X
pay-ka miu-ta kunuzi-n `He/she knows me'	X			X
pay-ka yu-ta kunuzi-n `He/she knows me'	X		X	X
pay-ka kunuzi-wa-n `He/she knows me'	X		X	X
pay-ka miu-ta rigsi-n `He/she knows me'	X			X
pay-ka yu-ta rigsi-n `He/she knows me'	X			X
Maria-pak kaza-pi-mi kausa-ni `I live in María's house'	X		X	X
Gabriel-pak wasi-pi-mi bibi-ni `I live in Gabriel's house'	X		X	X
ima rura-shpa-tak wasi-man bini-rka-ngi? `Why did you come home?'	X			X
ima rura-shpa-tak kaza-man shamu-rka-ngi?	X			X

`Why did you come home? ima rura-shpa-tak kaza-man bini-rka-ngi?	X		X
`Why did you come home? inki azi-shpa-tak wasi-man shamu-rka-ngi?	X		X
`Why did you come home? inki azi-shpa-tak wasi-man bini-rka-ngi?	X		X
`Why did you come home? inki azi-shpa-ta kaza-man shamu-rka-ngi?	X		X
`Why did you come home? inki-ta tak rura-hu-ngi?	X	X	X
`What are you doing? ima-ta tak azi-hu-ngi?	X	X	X
`What are you doing? inki azi-shpa-tak macha-shka anda-hu-ngi?	X		X
`Why are you wandering around drunk? inki azi-shpa-tak chuma-shka puri-hu-ngi?	X		
`Why are you wandering around drunk? inki azi-shpa-tak macha-shka puri-hu-ngi?	X	X	X
`Why are you wandering around drunk? ima rura-shpa-tak chuma-shka anda-hu-ngi?	X	X	X
`Why are you wandering around drunk? ima rura-shpa-tak chuma-shka puri-hu-ngi?	X		X
`Why are you wandering around drunk? ima rura-shpa-tak macha-shka anda-hu-ngi?	X		X
`Why are you wandering around drunk? nu miku-nayan-chu	X	X	X
`[I] don't want to eat' na kumi-nayan-chu	X	X	X
`[I] don't want to eat' ima-ta tak sembra-rka-ngi?	X	X	X
`What did you plant? inki-ta tak tarpu-rka-ngi?	X	X	X
`What did you plant?'			

yu-ka kay-pi partera-kuna-wan nazi-shka-ni-mi 'I was born here with a midwife'	X	X	X
bus-pak mamita-ka may-pi-tak nasi-rka? 'Where was your mother born?'	X		X
kan-kuna-ka papa-ta kuzina-hu-ngichi 'you (pl.) are cooking potatoes'			X
aki-pi-ka yu-ka kin-ta-pash no rigsi-ni chu 'I don't know anyone here'			X
Yu-ka Utabalu-man randi-ngapa anda-rka-ni 'I went to Otavalo to go shopping'			X

Appendix S-2: Afterword

A discussion of the possible implications of the present study for the relexification of Quichua to Media Lengua.

Media Lengua: theories of origin

Although some have suggested code-switching as the origin for certain mixed languages (e.g. Auer, 2000; Myers-Scotton, 1998), a strong case can be made against code-switching as the fundamental factor leading to the formation of Media Lengua (Backus, 2003, pp. 238-239; Bakker, 2003, pp. 129-130; Thomason, 2003, p. 29).¹ Nor is Media Lengua to be confused with Quichua-dominant speakers' L2 Spanish, with arrested interlanguage, or with foreigner-talk (Muysken, 1996, p. 1335; Muysken, 1997, p. 376; Thomason, 2003, pp. 31-32), all of which show at least some approximations to Spanish morphosyntax (e.g. Escobar, 2011; Haboud, 1988; Lipski, 2013, 2014).

The origins and formation of Media Lengua are not known with certainty, although given the need for both a full command of Quichua morphosyntax and a very firm grasp on the Spanish lexicon, it is almost inevitable that deliberate mixing was involved (Thomason, 2003, p. 33).

Muysken (1979, p. 43) speculates that Cotopaxi Media Lengua may have arisen in the first half

¹ Muysken (1988, p. 420) leaves this possibility open although making a stronger case for relexification, also raising the “(open) question of whether we can think of Media Lengua as the result of a kind of word-internal code-mixing. The affix is the head (Williams, 1981) and determines the language index of the word. The advantage of this view is that it relates the possibility for relexification in Quechua to the highly agglutinative character of the language: since there will always be affixes to mark a word as belonging to the language, the root can be derived from a different language.”

of the 20th century; this language is mostly spoken by “obrerros,” younger men who have emigrated to Quito, first to work on the railroad and also in construction (Muysken, 1997, p. 374). According to Muysken (1996, p. 1335):

Media Lengua probably came into existence because acculturated Indians could not identify completely with either the rural traditional Quechua culture or the urban Spanish culture. Thus, it was not communicative needs that led to it, but rather expressive needs. It appears that ethnic self-identification is of crucial importance in determining the relation between Quechua and Media Lengua and Spanish in the Ecuadorian highlands. [...] It is not at all unlikely that Media Lengua emerged as a result of migration to the capital, among the young adult males who were suddenly much more affluent and independent than their peasant relatives, and suddenly confronted with a Hispanic urban society.”

This is reaffirmed by Muysken (1997, p. 376): “Due to their geographical situation and to the necessity for and ability of their inhabitants to make frequent trips to the capital to look for work, the communities have come to be culturally differentiated from neighboring areas, to the extent that their people find it necessary to set themselves apart from their neighbors.” This viewpoint is consistent with the hypothesis of Backus (2003, p. 134) that “mixed languages are encountered in situations in which a new ethnic group has come about, feeling distinct from both cultures whose languages they speak ...” Whereas ethnic identity may underlie the origins of Media Lengua in Cotopaxi, in Imbabura province Media Lengua is spoken in indigenous communities whose residents continue to identify themselves as indigenous Quichuas, and not in any way “mixed.”

Both Stewart (2011, 2013, 2015), who studied the Media Lengua of Pijal, and Gómez

Rendón (2008, pp. 56-57), who described the situation in Angla and Casco Valenzuela, collected oral testimony to the effect that Media Lengua was first taken from Pijal to Angla, possibly through marriage, whence it spread to Casco Valenzuela.² Many residents of Pijal are merchants who buy and sell farm animals, purchasing the animals from Quichua-speaking residents of mountain communities and selling them in the markets of Otavalo, where Spanish is more often the trade language. Some residents of Pijal have suggested that this status has facilitated the development of Media Lengua; this does not seem entirely plausible since there would be no reason to develop a third language rather than maintaining community-wide bilingualism. Although there are some notable differences between Cotopaxi and Imbabura Media Lengua, the latter also appears to be a mid-20th century development, and a Cotopaxi connection may be involved. Stewart (2011, p. 34) notes that a political representative from González Suárez affirmed that in the early 20th century Pijal Bajo received immigration from Cotopaxi; a similar remark was made to the present author by Antonio Maldonado, a community leader well-versed in the oral traditions of Pijal. If Media Lengua arrived in Pijal as the result of immigration from Cotopaxi, there may have been some morphological leveling (Stewart, 2015, pp. 186-187). It is perhaps suggestive that a few ML speakers in Pijal employ the diminutive suffix *-wa* (e.g. Stewart, 2013, pp. 2, 5) characteristic of Cotopaxi (Catta, 1994, p. 27) in addition to the typical Imbabura Quichua diminutives in *-gu*.

² Gómez Rendón (2008, p. 56) proposes that Media Lengua entered Angla when men who had worked outside of the community upon returning spoke Spanish to their children but Quechua to their wives. The latter increasingly incorporated Spanish lexical roots, eventually leading to Media Lengua; this gradual lexification approach is not consistent with the lack of intermediate partially lexicalized variants, but does echo popular opinion in these communities.

Implications for the relexification of Media Lengua

The results of the repetition and un-timed judgment tasks may yield an additional dividend, in shedding some light on the question posed earlier of why the relexification of Media Lengua occurred so rapidly and is so complete. The essential incompatibility of switches involving functional elements such as negation and interrogation as well as pronouns may be partially responsible for the “all or nothing” aspect of the Quichua-Media Lengua dichotomy. Once pronouns, interrogatives, and negative items started to relexify (at some indeterminate but inevitable point in the trajectory from Quichua to Media Lengua), this appears to have catalyzed the “conversion” of the remainder of the Quichua-derived lexicon to Spanish-derived roots, in a fashion that is for all intents and purposes irreversible. This hypothesis does not explain the scarcity of code-switching between Quichua and Media Lengua not involving these “protected” categories. Sociolinguistic factors are more likely at work here; even though in the communities under study the majority of the residents are fluent in both Media Lengua and Quichua, at the individual level most have implicitly chosen to predominantly use one language or the other. In view of the lack of community-internal strictures against using Media Lengua there are few situational factors that would prompt speakers to switch between these two languages with the same interlocutor.

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Figure S1

Screen shot for the un-timed acceptability judgment experiment

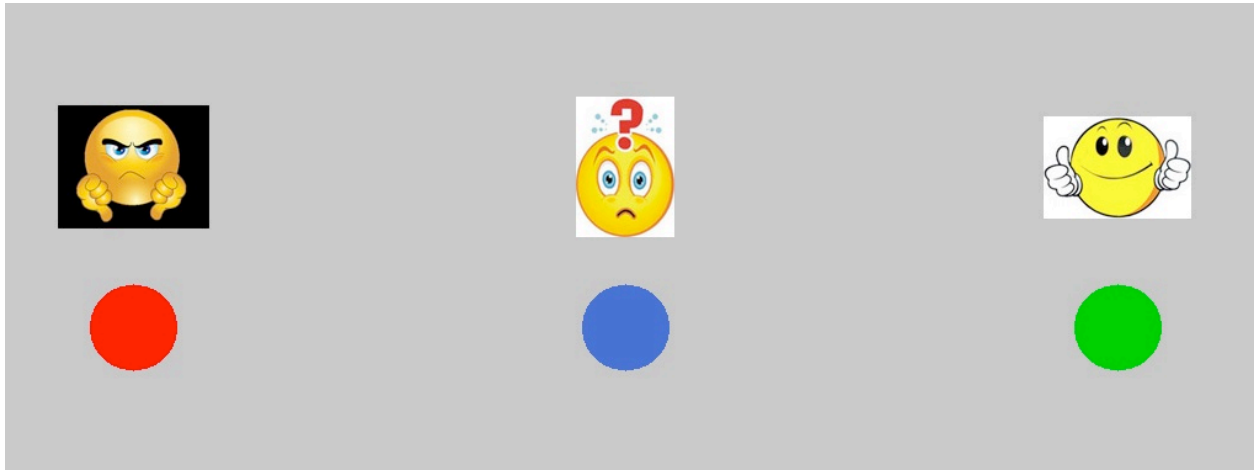


Figure S2

Screen shot for the language-classification experiment

