

My idea for a course project is based on the problem of translation and receiving accurate and useful translations instantly (or near-instantly). **What if we could crowdsource a way to help people communicate across languages, both accurately and quickly?**

Human-sourced translations often have a latency or cost. For instance, many human translators or agencies will only translate documents of a certain length, and will charge by hour. Other human-sourced translations cover only a few staple sentences (“The boy eats the apple”, eg. Duolingo). Although great for language learning, these sentences aren’t useful in everyday conversation. Finally, machine translation systems (eg. Google Translate) were designed to solve some of these problems, and are indeed instant and ideal for short text – but they are inaccurate and often incoherent.

However, through the powers of the internet, we can harness target language speakers’ abilities to translate small phrases on-demand (“where’s the bookstore” or “love to play soccer,” for example). With mobile computing, this kind of interaction becomes both feasible and useful. Imagine being in a shop in a foreign country where you need to communicate instantly and quite accurately to the shop owner. What if you could type your query into your phone and then receive possible translations almost instantly, translated and verified by native speakers?

On the translator side, I envision that translators can view open sentences and potentially also candidate translations and input or “upvote” the best choice. This could be a good way for them to practice a language or help their community. Additionally, we could incorporate machine translations as options or “correctable” options for translators to pick.

Experiment

In order to experiment with this idea, we can play with the following **independent variables**:

1. **Translator Input:** Would they simply enter a candidate translation? Would we give them a collection of 3-4 of the top translations so far, and they can select one if they

want, thus adding to the translation's rating? How else can we make the translator's job easier and more rewarding?

2. **Translation selection:** What do we show our translation-requester as an answer? The top-rated or most common answer? Would we reduce similar queries ("where's the ball" and "where did the ball go") to the same query?
3. **New query presentation:** How do we notify people that new queries are available to translate? Do we let them come to the product, remind them every now and then, or integrate into another service (such as logging in or gameplay such as Duolingo)?

Similarly, here are **dependent variables** we can use to measure how effective our app is:

1. **Accuracy:** Are translations accurate?
2. **Time:** How long does the query-answer cycle take for the requester?
3. **Usage:** How often do people use the service to request a translation or translate?

Our experiment's **participants** would be a set of students who know a target language fluently (translators), and a set who are learning or do not know the language (requesters). We can set the requesters up in various levels of language immersion (eg. talking to a person who refuses to speak in the target language, or ask them to write a paragraph in the target language), while giving them a prototype of our product. We can then test our independent variables on both the translators and requesters, while recording accuracy and asking participants to record time and ease of use.

In terms of **results**, my prediction is that given a large enough participant pool, we will have both relatively accurate and quick responses, provided the translators participate. I think it would be exciting to learn how people interact with languages and text, and how we can make it smoother by finding out what versions of our prototype work or don't work.

The biggest difficulty, I believe, will lie in getting translators motivated to choose to translate. We would have to play around with lots of different ways to present the app to induce motivation, and I think that in the end we can learn a lot about why people choose to expend effort in certain activities but not others.