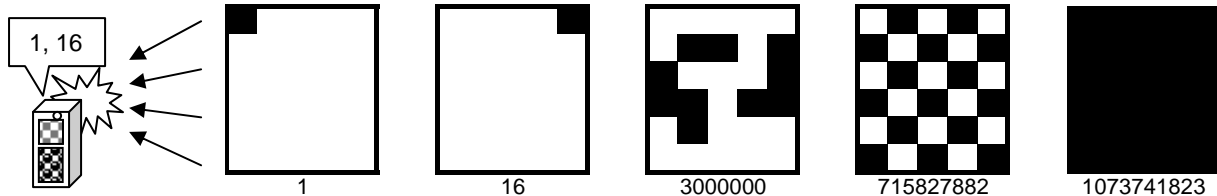


Logo Code: a Common Language Based on 2D Barcodes

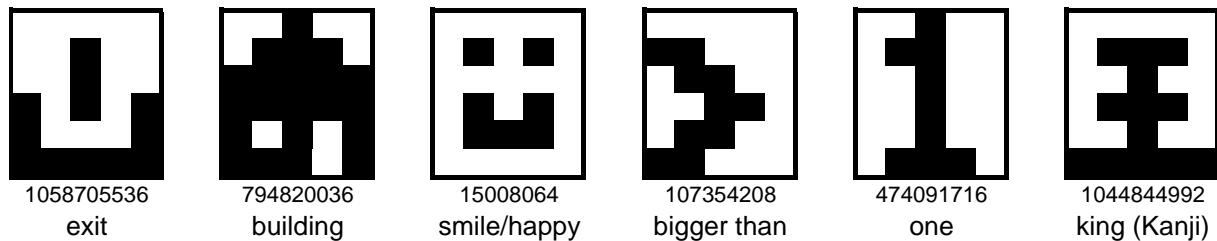
Logo Code is a logographic writing system based on 2D bar-coding. Its signs represent two meanings: a logo to be read by people and a numeral code for the computer. Some existing pictograms and ideograms can be used, while many new ones can be created. Digital readers, such as the camera on the mobile phone, can be used to read, translate and learn unfamiliar logos. Examples of usage are: direction signs, product information, art and games. But above all, it's a linguistic thought experiment.

How computers read 2D Barcodes

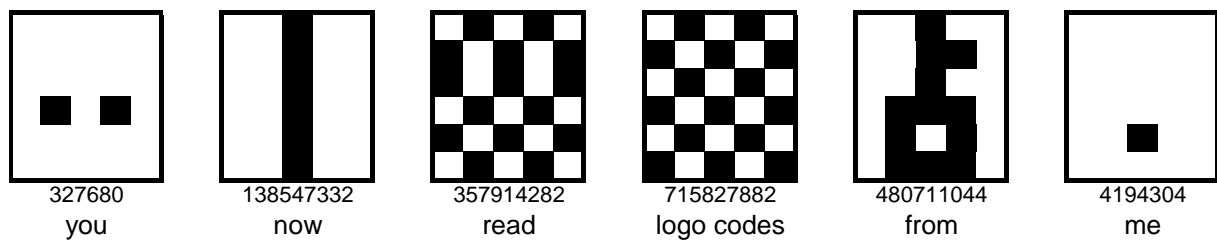


Optical readers, such as a webcam, or the camera on your mobile phone can read these images as binary code. The first square is a binary 1 (1), the second 10 (2) the third 100 (4), etc. The unique number refers to information in a database: 100100011 means X. Here, the rectangle serves as a marker to identify the position and size of the code and its bits. Other markers can be used too. Practice shows communication even works when lines are fuzzy or the reading surface is tilted.

Coding existing logos



Developing new logos



With a 5x6 matrix, logos can be created which are still readable and writable for humans, while it provides over a billion possible codes. In most languages people need only about several thousand words, while many nouns, verbs and adjectives are used in most languages. Next, grammatical logos (e.g. plural, tense) and phonetic logos for names, need to be generated. This adds up to about 10.000 logos. Within a matrix of one billion possibilities, there is enough room to create recognisable shapes.

Use

Logo codes can be used where flows of people of different languages need information: international airports, sports events or tourist areas. The codes could also serve translation of product information or documents. Logos can also be constructed in all size and materials, for artists, architects and game developers to add meaning to public places. Logos can be read by blind people like Braille. Building a keyboard for logo codes is easy: 30 buttons in a 5x6 matrix along with some function buttons. Still above all, logo code is a thought experiment on how people and machines deal with languages.

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Some issues for further discussion

Standards

Coding and developing logos needs to be based on commonly understood standards. From a technical point of view it's just a database with a reference for each logo and software to get the images understood by optical readers. Words which prove to be unsuitable for clear pictograms could receive a random logo. Getting humans to agree on standards is a whole different issue. Different groups will have different reading directions, grammatical backgrounds and stakes in getting certain standards commonly accepted. Organising a clearing house in which the standards are solidified may prove to be a recipe for power struggle. Perhaps the most important decision will be whether procedures will be centralised (a committee of global representatives) or decentralised (open source).

Grammar

Logo coding will need a basic grammar in order to construct sentences. Further research is needed on examples and lessons from current languages. Examples on how pictograms build sentences can be found in Chinese and Korean. Nouns could be written twice to state the plural, as in Bahasa Indonesia. Much can be learned from so called agglutinating languages in which basic words can be modified using affixes instead of changing the whole word, as in Turkish, Finnish and Japanese. Some language elements may prove to be unnecessary, such as the use of capitals, gender and case forms.

Names and sounds

Names and culturally specific concepts are difficult to convert into single logos, as there are just too many of them. Logos can be developed for existing alphabets or a new phonetic system. The first option would cover Hindi, Roman, Arabic, Hebrew and Braille. This could lead to long lines of code and also force many Asian names to be translated in alphabet. In the second option all foreign names could be translated in the same fashion, but may not cover all sounds, like in Japanese Katakana.

Keeping logos readable for humans

In theory, a 5x6 matrix provides 1.073.741.824 unique logos. In practice it goes down once you add certain requirements. If you want to exclude the possibility of one logo resembling another read from the side or up side down, the number is divided by two. Also, some signs may need to be excluded because they already refer to something confusing or inappropriate. Moreover, many randomly assigned logos may prove to be too difficult to read and memorize by people. Although the needed 10.000 logos is only a fraction of the possibilities, it could be a bigger matrix is needed.

Acceptance and use

Esperanto failed because people generally don't learn languages that are not commonly used on a daily basis. Lack of critical mass limits immediate reward, a chicken and egg dilemma. Still, in logo code the threshold can be low. Almost all mobile phones have optical readers now and the software needed, can be simple and free. Logo coding may start off as an effortless intermediary: people using their mobiles to read street signs or instructions abroad. Once they encounter certain logos often, they may start recognising them and learn without noticing.

Playing around

Logo codes may or may not evolve into a language for all, but it does open up many creative opportunities. As a mind experiment in semiotics, it could be reward in itself. What kind of logos can you think of? Would it be possible to create logo code poetry? For example build up a single logo from several logos, riming patterns or codes readable from different directions. Could a piece of pavement, building or housing block by chance be read like a logo? What would the keyboard be like? Just a matrix of 5x6 buttons, steering device and functional buttons? Could blind people read the codes like Braille? And what to think of sign language, as we do have five fingers on each hand... Many other opportunities are open for exploration. Please let me know.

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