

THE MR MAROR TO BE JOLLY LA LA LA LA LA **An investigation of writing (and gibberish) on Dollarware**

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Abstract: Inferring meaning from artifacts is often a difficult task in archaeology. The advantage to studying symbols and their meaning using Dollarware (discount ceramic vessels) is that we are neither temporally nor culturally removed from this set of material culture. Ceramic vessels with writing are a form of communication technology, for they convey messages between people. Interpretation of meaning and sounds from written notations are not only possible, but likely intended by the vessels' makers. (At least, this is what common sense might lead us to assume. As we shall see, however, this might not always be the case.)

Introduction

Interpreting meaning, beliefs, and ideas using artifacts is a notoriously difficult endeavour for archaeologists, particularly when they are working with prehistoric material. According to Christopher Hawkes (1954), artifacts readily yield technological information about past societies compared to other types of information. Somewhat less accessible is economic information, and even less accessible is social and political information. Least knowable of all are the symbolic or religious beliefs of people living in the society from which the artifacts derive.

Accessibility of meaning is potentially augmented for the archaeologist if writing is present on the artifacts. Stephen Houston (2004) discusses two methodological avenues through which archaeologists can study the meaning of graphic notations. The first is understanding "situation", the past social and cultural context in which graphic notations were used; the second is "extraction", the process in which the meanings and sounds of graphic notations are interpreted by the researcher (Houston 2004:223). Houston (2004:229) also distinguishes between two types of writing systems: open systems "can be employed by any number of different groups", while closed systems "exist only in close relation to particular languages and cultures". In other words, open writing systems are more easily understood even without cultural context, whereas closed writing systems can only be understood with cultural context.

The advantage of studying meaning, beliefs, and ideas using Dollarware (defined as "ceramic vessels that are intended for humans to drink out of and cost \$1.00 or less" at <http://dollarware.org>), is that we are neither temporally nor culturally removed from this set of material culture. Ceramic vessels are common items in industrialized societies. We are therefore familiar with these vessels' common functions. Moreover, because manufacturers use a variety of strategies to attract consumers, who, for their part make purchasing decisions, we can learn about people's ideas and beliefs regarding Dollarware. Because some vessels have writing on them, we can directly ascertain the meaning of graphic notations found on these vessels if we are knowledgeable about the language(s) with to which the writing belongs. Writing communicates messages, on ceramic vessels and elsewhere. Presumably, the audience of writing on ceramic vessels is the potential buyer or the user, though they may not be the same people.

As members of industrialized societies, and as buyers and users of ceramic vessels, we are well placed to understand the social and cultural context in which Dollarware is found and used. In other words, interpreting "situation" in Houston's sense of the term is possible, for we are immersed in the very context in which Dollarware exists. Because manufacturers often incorporate linguistic motifs onto vessels, we can also attempt to interpret the messages conveyed through ceramic vessels bearing writing. Incorporating writing onto the external surfaces of ceramic vessels might be a design strategy intended to increase the vessels' appeal to potential purchasers. Perhaps different linguistic motifs convey different sorts of messages, which attract different people depending on individual preferences and goals. "Extraction" of meaning and sounds from writing found on Dollarware is not only possible, but likely intended by the manufacturers and distributors. At least, this is what common sense might lead us to think. Is that true of all ceramic vessels, however? (See Appendix A – writing on E-03.)

My investigation of Dollarware has largely focused on this central question: *Is writing on Dollarware translinguistic?* To ask this question another way: Are messages on Dollarware intended to communicate messages to speakers of different languages? Such questions are particularly interesting to ask of Dollarware found in contemporary Montreal, a city situated in the French-speaking province of Quebec that has a large bilingual population.

Did ceramic vessels in Montreal appeal to speakers of both French and English? To speakers of other languages? How many translinguistic vessels would one find in Montreal? And how many vessels have writing that is understandable to speakers of only one language? How does the presence of imagery on a vessel influence the ability of a linguistic motif to communicate an idea? Conversely, how might the presence of writing influence a viewer's interpretation of an image on a vessel?

Under the guidance of Professor Stephen Chrisomalis, the students in the course 'ANTH 357: Archaeological Methods' acquired 289 ceramic vessels to analyse (see www.dollarware.org). 228 of the vessels were purchased, brand new, from discount stores in Montreal by teams of students. 61 vessels were purchased second-hand at Value Village.

This sample of ceramic vessels provided an opportunity through which the above questions could be explored. I therefore set out to investigate, keeping in mind in particular the issue of whether or not the vessels might be translinguistic. In the process, I came across many other fascinating finds – some of these discoveries were completely unexpected.

Methods

A) The first step in my investigation was to identify what was written on the ceramic vessels. An inventory documenting all the linguistic motifs visible on the exterior surfaces of the vessels was created. [Appendix A]

Using visual inspection, all instances of writing on each vessel were identified. The writing thus detected was entered into a word processing document. In entering the data, letter cases (upper and lower) and accents *as they appeared on the vessels* were recorded as accurately as possible. For each vessel, a brief note of the non-linguistic motifs present was made. Where it was useful, additional comments were made to highlight interesting or peculiar aspects of what was observed.

The number of times a word/phrase was repeated was noted. Information on font styles was not recorded. I also did not record information about the spatial distribution of writing on each vessel. Where it was difficult for me to record the writing precisely as it appeared on the vessel, a brief description of the writing was made instead.

This was the case for all 7 vessels with Canadian monetary bill motifs – B-06, D-01, D-09, D-12, E-09, E-14, and E-15. Trying to record writing on these vessels was complicated by the fact that, on real dollar bills, microscopic writing is present. The resolutions of the images on these vessels were not so high that the microscopic writing could be read. I therefore did not replicate the writing for these seven vessels in the inventory. In retrospect, however, my judgement is that I should have documented all the words that were readable by the naked eye.

Instances of writing on the bottoms of the vessels were not recorded in the inventory. This decision was made based on the assumption that the bases of vessels typically do not bear decorative elements, whether linguistic or not. (Information about places of origin, distributors, or retailers was considered to be non-decorative.) A classmate, Bridget Sandison, looked at all the vessels' bases for manufacturer/importer/distributor information. According to Bridget, many of the vessels had blank bases; those that had writing present indicated the place of origin. In one or two instances decorative marks indicating the manufacturer or brand were present. Her observations confirmed my assumption.

Adhesive stickers on the exterior surfaces of two vessels were also discounted in the study ("FLW JAN 26" on E-01 and "MC MODA CONCEPT" on E=05).

B) For vessels with writing, the language(s) the linguistic motifs were associated with were identified and noted. [Appendix A]

The writing on vessels were read, and their associated language(s) were identified. For words that potentially belonged to English and another language (or other languages), English was initially identified as the 'default' language. I did this because, early in my investigation, I was unsure as to what the context of my analysis should be. If the context was to be global, then I faced the difficulty of having little or no knowledge of most of the world's languages. I would therefore have been unable to determine all the languages a linguistic motif potentially belonged to across the world. I was, however, able to confidently identify writing as English if a linguistic utterance was in common usage among English-speakers.

C) The context of the analysis was defined, and the term 'translinguistic' was defined within that context. For vessels bearing writing, they were classified as translinguistic or non-translinguistic. In the case of non-translinguistic writing, the language to which it belonged was noted.

It was decided that, in the process of investigating whether or not Dollarware writing is translinguistic, it must be kept in mind that the vessels being studied were acquired in the city of Montreal. The context of the study was now defined as contemporary Montreal. The term 'translinguistic' was thereafter used to refer to writing on Dollarware that is understandable to both English-speakers and French-speakers.

If a vessel's exterior had at least one word, phrase, or acronym that was in common usage among both English-speaking and French-speaking Canadians, that vessel was classified as translinguistic (e.g. all vessels with the word "Canada"). If a vessel's exterior had both English and French writing, it was also classified as translinguistic, even if the individual words were commonly used in either English or French, but not both (e.g. N-47).

To get a sense of which words and their variants are typical and non-typical, I performed comparative Google searches using the Advanced function (see P.8 – discussion of F-09). To find out if a word, phrase, or acronym is commonly used or commonly understood among Francophones, I consulted Claudine Gravel Miguel, a French-speaking classmate. This was done for the acronyms "xoxo" (D-03), "TM" (F-20), and "RIP" (I-15). Both "xoxo" and "RIP" are commonly understood among Francophones according to Claudine. "TM" is possibly not widely-known among Francophones, but because the vessel this acronym was on (F-20) also had the words "THE SIMPSONS" on it, which is potentially familiar to French-speakers

in Montreal, I classified this vessel as translinguistic. (A Google search of "The Simpsons" of sites from Canada in the French language yielded 31,000 results, supporting the hypothesis that French-Canadians know about The Simpsons.)

Vessels with nation names and geographical place names were classified as translinguistic if these names were the same in both English and French. Vessels bearing brand/store names were considered translinguistic. This is because brand/store names that are specific to one language might nevertheless be familiar to Montrealers if the brand is used or if the store is located near/in Montreal.

The vessels bearing brand/store names are all found the comparative Value Village collection – these are "The BRICK" (N-10), "LA SENZA" (N-12), "Edible Arrangements" (N-19), "Lipton" (N-37 & N-57), "Tia Maria" (N-49), and "Coty" (N-49). The BRICK does not have a store in Montreal, but according to its website, there are stores in the province of Quebec. I classified this vessel as translinguistic, though it can be argued that the presence of one such vessel is not necessarily indicative of familiarity with this store among most Montrealers. La Senza and Edible Arrangements both have several store locations in Montreal, so I inferred that Montreal residents would be potentially familiar with these names. Lipton has a Canadian site in French, so I classified the two vessels with this name as translinguistic. As with the "The BRICK" vessel, the mere presence of the vessels with the words "Tia Maria" and "Coty" suggested to me that these brand names might be known in Montreal, though this might not necessarily be the case. Perhaps trips to alcohol retailers and cosmetic counters might be useful for finding out whether these two brands are well-known to Montrealers.

D) The heights of linguistic motifs were measured, with the intention of using these measurements as a proxy for conspicuousness of writing. [Appendix B]

This procedure was carried out because some measure of text size was needed in order to determine whether or not writing on Dollarware is intended by the vessels' designers/makers to be read by potential buyers and users.

Using a calliper, I measured the tallest and shortest letters of each linguistic utterance to the nearest millimetre. This was done for all vessels bearing linguistic motifs on their exterior surface, excluding the base. Where a vessel clearly had one exterior design repeated twice, I measured the heights of linguistic motifs on only one side of the vessel, assuming that the measurements would be the same for the other side. The heights of partial words/acronyms on B-01, C-07, D-16, D-18, and E-07 were not measured. (Visual inspection of these vessels tells us that the heights of the partial linguistic motifs are similar to the complete ones on the same vessels.)

For each linguistic utterance found on any given vessel, the heights of the tallest and shortest letters were averaged. For each vessel, the average heights of all linguistic utterances found on that vessel were then averaged; for each vessel, this number was then divided by the height of the vessel. This produced a ratio that can act as a measure of writing visibility for all vessels bearing writing.

E) Some vessels were photographed close up, as photographs capture the peculiarities of the writing on vessels better than written descriptions.

Vessels that I anticipated would be discussed in detail were photographed using a digital camera. In most cases this is intended to show certain linguistic motifs on some vessels that are not standard in the language they belong to or to show that writing on some vessels are not intended to be read by the onlooker or user.

Qualitative Observations and Analysis

See Appendix A for the inventory of the linguistic motifs on Dollarware and Value Village ware.

In the process of handling and inspecting the 289 vessels, several interesting observations were made.

Observation 1: Vessels B-01, C-07, D-16, D-18, and E-07 contain partial words. [Figures 1 to 5]



Figure 1: B-01
(<http://www.dollarware.org/b-01.JPG>)



Figure 2: C-07
(<http://www.dollarware.org/c-07.jpg>)



Figure 3: D-16
(<http://www.dollarware.org/d-16.jpg>)



Figure 4: D-18
(<http://www.dollarware.org/d-18.jpg>)

C-07 and E-07 both have one word repeated across the vessels' exterior ("Chocolate" on C-07 and "CANADA" on E-07). For both these vessels, some words do not appear in their entirety because they 'extend' beyond the edge of the vessel's exterior surface. B-01, D-16, and D-08 bear partial words because of their respective artists' rendering of depth and superposition. For all five vessels, all partial words present are incomplete repetitions of words that appear also in their complete form. This suggests that even these partial words are meant to be read. The presence of the same words in full allows the viewer to extrapolate the rest of an incomplete word.



Figure 5: E-07
(<http://www.dollarware.org/e-07.jpg>)

Observation 2: The images on C-07 do not resemble what they are supposed to resemble.

The presence of the word “Chocolate” on C-07 suggests that the images on the vessel are intended to represent chocolate. It appeared to me that the image did not look like what it was supposed to look like.

I showed five people a picture of the image found on C-07 (Figure 6). These people are not in the Archaeological Methods class and have not seen this vessel or photographs of it. I told these people that this is ‘a photograph of an image found on a mug’. I asked them what they thought the image was supposed to depict. If they did not guess something edible on their first try, I told them that the image represents something edible (‘the hint’), and I asked them to guess again.



Figure 6: Repeated image on C-07

Participant A guessed “bad representation of a cylinder” before the hint, and guessed “chocolate” after. Participant B guessed “suitcase tags/stickers” before the hint, and guessed “cookies/chocolate” after. Participant C guessed “hotel room key” before the hint, and guessed “breath mint” after. Participant D guessed “a red piece of Chiclet gum that was run over by a car and is spiraling downwards on the cup” without the hint. Participant E guessed “1) luggage tag or 2) a person with evil smile, hand to the chin” before the hint, and “crab/lobster claws” after the hint. This suggests that the image does not resemble what it presumably tries to depict.

I explored this issue of whether or not an image resembles what it is supposed to depict, because associations between writing found on a vessel and images depicting what is written on the same vessel is relevant to my investigation. In the context of contemporary Montreal, or even a larger one—that of industrialized societies—many images might be understandable to people of different cultures and languages (i.e. they are transcultural). If writing on a vessel is non-translinguistic (i.e. associated with only one language), and if the image on the same vessel does not resemble what it is intended to resemble, then the likelihood of the message being conveyed is reduced. On the other hand, if the image is an accurate depiction of what the writing conveys, then the message might still get through to the audience, despite the fact that the writing is non-translinguistic.

Observation 3: There are three hearts on D-03, with each containing an "xoxo" motif.



Figure 7: D-03
(<http://www.dollarware.org/d-03.jpg>)

There was some questioning at first as to how to classify "xoxo". It can be considered to be a geometric motif. However, it seemed likely that the artist intended "xoxo" to be the pictographic motif representing 'hugs and kisses'. The hearts and the colour red (associated with love/passion), and also the fact that the vessel was purchased two days before Valentine's Day lends strength to this idea.



Figure 8 (right): Detail on D-03

According to Claudine (my French-speaking classmate), French-speakers understand and use "xoxo" in informal letters and emails. As I was already aware that it is also used this way among English-speakers, I classified this vessel as translinguistic.

Observation 4: There appears to be linguistic irregularities on D-16, D-17, D-19, E-08, F-09, F-14, and I-03.

D-16 [Figures 3 and 9]: There is one instance of the word "evey" on D-16. This artist might have made an error, as the intended word might have been "every". The mistake is presumably attributable to the artist because the words on this vessel appear to have been handwritten.



Figure 9: Detail on D-16



Figure 10: D-17
(<http://www.dollarware.org/d-17.jpg>)

D-17 [Figure 10]: There are no accents on the first E of "CREME" and the e of "cafe". In their standard forms, these letters are accented. There is an apostrophe between the words "cafe" and "latte", which is also not typical.

D-19 [Figure 11]: The words 'Caffè Latte' repeat across the exterior surface of this vessel. Some instances of 'Caffè Latte' carry the accent on the e of Caffè, while others do not. Perhaps the unaccented words are intended to be Anglicized forms.



Figure 11 (left): Writing on D-19

Note that some "CAFFÈ" words bear an accent, while others do not.

Photograph of the vessel:

(<http://www.dollarware.org/d-19.jpg>)

E-08 [Figure 12]: The accent on the e of Cafe is not directly above the letter e. It does not look like an apostrophe, however, unlike the writing on D-17.



Figure 12: E-08

(<http://www.dollarware.org/e-08.jpg>)

F-09 [Figures 13-15]: There are two different spellings of "macchiato"/"machiato" on this vessel. "Macchiato" seems to be the standard form of this loan word, borrowed from Italian.

A Google search of "macchiato" for sites in English yielded approximately 943,000 results, whereas "machiato" yielded approximately 31,000 results (as of March 10, 2008). The same search performed for sites in Italian yielded approximately 357,000 results, whereas "machiato" yielded approximately 1,090 results (as of March 10, 2008). Perhaps the presence of two different spellings of the word was due to a manufacturing error.



Figure 13: F-09

(<http://www.dollarware.org/f-09.jpg>)



Figure 14: "macchiato" on F-09



Figure 15: "machiato" on F-09

F-14 [Figures 16 to 18]: On one side of the vessel, there is an indeterminate mark after the word "My". This mark is not present on the other side of the vessel which otherwise has an identical image. On first glance the mark looks like the letter "l" (lower case of L). However, the letter "l" in the word "Flutter" does not resemble the mark following the word "My". Instead, the mark looks like the first stroke of the letter "f". This was likely a manufacturing error.



Figure 16 (left): Detail on F-14 on one side of the vessel



Figure 17 (middle): Detail on F-14 the other side of the vessel



Figure 18 (right): Detail on F-14 with the word "Flutter"

Note that the letter "l" of "Flutter" is not similar to the mark after the word "My" in Figure 17

Photograph of the whole vessel: <http://www.dollarware.org/f-14.jpg>

I-03 [Figures 19 and 20]: The linguistic utterances on I-03 are understandable in English, but they are somewhat unusual. One such utterance is "Today's feeling is what color." [Figure 19]. It is phrased in the form of a question, but the punctuation mark is a period rather than a question mark. While the utterance is comprehensible, it is a strange expression, as feelings are not commonly described in colours. Another unusual linguistic motif found on the vessel is "Have a nice day! Gentle time is on my side." [Figure 20]. Placed close together, the two expressions seem non-sequitur. The second sentence seems odd even on its own.



Figure 19: Detail on I-03



Figure 20: Detail on I-03

Photograph of the whole vessel:

<http://www.dollarware.org/i-03.jpg>

Observation 5: On first impression, the writing on E-03 looks like the lyrics to the Christmas song, "Deck the halls". However, close inspection reveals that the writing consists of lyrics from the song interspersed with gibberish. [Appendix A – E03]



Figure 21 (left): Detail on E-03



Figure 22 (right): Detail on E-03

Photograph of the whole vessel: <http://www.dollarware.org/e-03.jpg>

The writing on the vessel says: "DECK THE HALLS WRRU MR GHA HF HOOLY FA LA LA LA LA LA LA LA LA LA LA THE MR MAROR TO BE JOLLY LA LA LA LA LA LA DECK THE HALLS WRRU MR GHA HF HOOLY FA LA LA LA LA LA LA LA LA LA LA THE MR MAROR TO BE JOLLY LA LA LA LA LA LA".

After inspecting this vessel, it occurred to me that it was probably not the intention of the designer for the writing to be read by potential purchasers or users. The height of the writing on this vessel was approximately 1 mm (to the nearest mm). The placement of writing on the vessel is peripheral, making the writing less conspicuous. On the shelf, the writing on the vessel most likely would not have been read by potential buyers. (Photograph of the vessel on the shelf: <http://www.dollarware.org/sitee-05.jpg>)

E-03 is an oddity because it appears that the designer knew what writing he/she was doing. Because there are whole sections of gibberish, it is unlikely that they were the result of typing errors. The writing's small size and incomprehensibility suggest that it was not intended to be read. The letters are the same size throughout, so potentially all words (and non-words) are equally detectable. However, because convention (in both English and French) is to read from left to right, the words "DECK THE HALLS" have

primacy in terms of likelihood of being read. Perhaps the makers thought that the viewer would stop after registering the idea that the writing on this vessel consists of lyrics to the song.

These five observations were fascinating in that they reveal more about the designers/manufacturers/distributors than they do about potential buyers/users. In particular, the five points discussed above suggest that:

- Designers employ artistic techniques to convey depth in two-dimensional images. One such technique is the use of incomplete words and letters.
- When writing on a vessel is intended to convey a concept or meaning to an audience, the presence of an image that is intended to convey the same concept or meaning is not necessarily effective if it does not resemble what it is depicting. Resemblance is possibly even more crucial for vessels containing images that are unaccompanied by writing. (This latter hypothesis was not explored in this study.)
- Related to the point just made, the presence of writing conveying the same concept or meaning as that conveyed by images on the same vessel might strengthen the message by guiding audience interpretation of the vessel's iconography.
- Linguistic irregularities are interesting because they give us some indications as to what designers, manufacturers, and distributors think about what would be popular or accepted by their targeted consumers. Design and manufacturing errors (e.g. misspellings) might tell us something about what designers, manufacturers, and distributors think their potential consumers would tolerate (though it is also possible that they did not detect the errors). Non-standard word forms or peculiar linguistic utterances might suggest unfamiliarity with standard English/French, or perhaps deliberate design decisions based on what is perceived to be potentially popular.
- In one known case, non-standard language was found on a vessel. Size and placement of the writing suggests that it was not intended to be read. This opened up the possibility that writing on vessels is not necessarily intended to be read. (It was this particular observation that prompted me to measure the height of all linguistic motifs on all of the vessels.)

Quantitative Results and Analysis

Proportions of non-linguistic, translinguistic, and non-translinguistic vessels

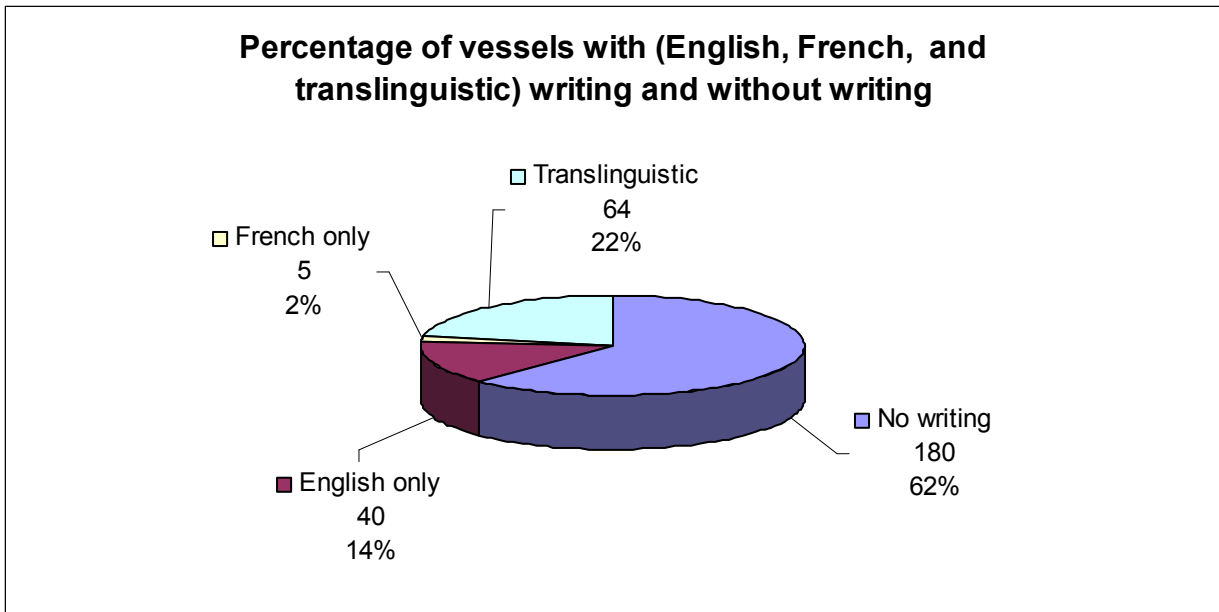


Figure 23 Pie chart showing the frequencies and percentages of vessels without writing, with English writing, with French writing, and with translinguistic writing

The following descriptions refer to the absence and presence (of different kinds of) writing on the exterior surfaces of the vessels, excluding the bases.

Out of the entire collection of vessels (Dollarware and Value Village ware), 180 (62%) vessels do not have writing. 40 (14%) have writing consisting of words or phrases that are in standard or common usage in

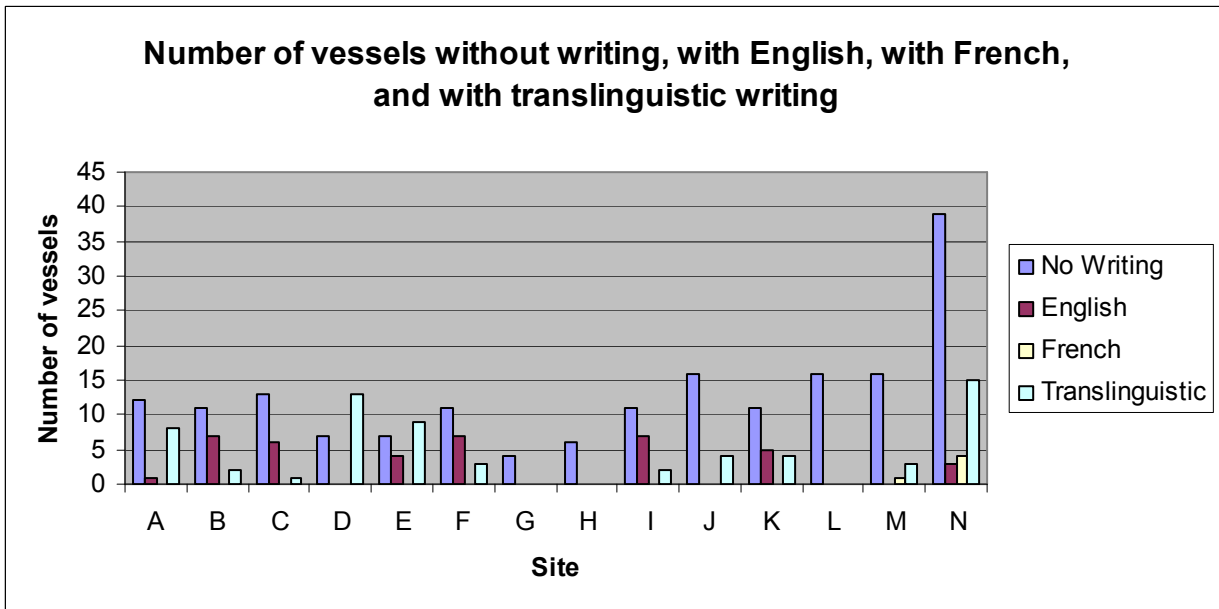


Figure 24 Histogram showing the number of vessels without writing, with English writing, with French writing, and with translinguistic writing at each site

only English (though some vessels with linguistic irregularities were also included if most of the words on the vessel are standard in English). 5 (2%) vessels had writing consisting of words or phrases that are in standard or common usage in only French. 64 (22%) vessels had writing that was translinguistic, i.e. in standard or common usage in both French and English (and possibly other languages). [Figure 23; Appendix C]

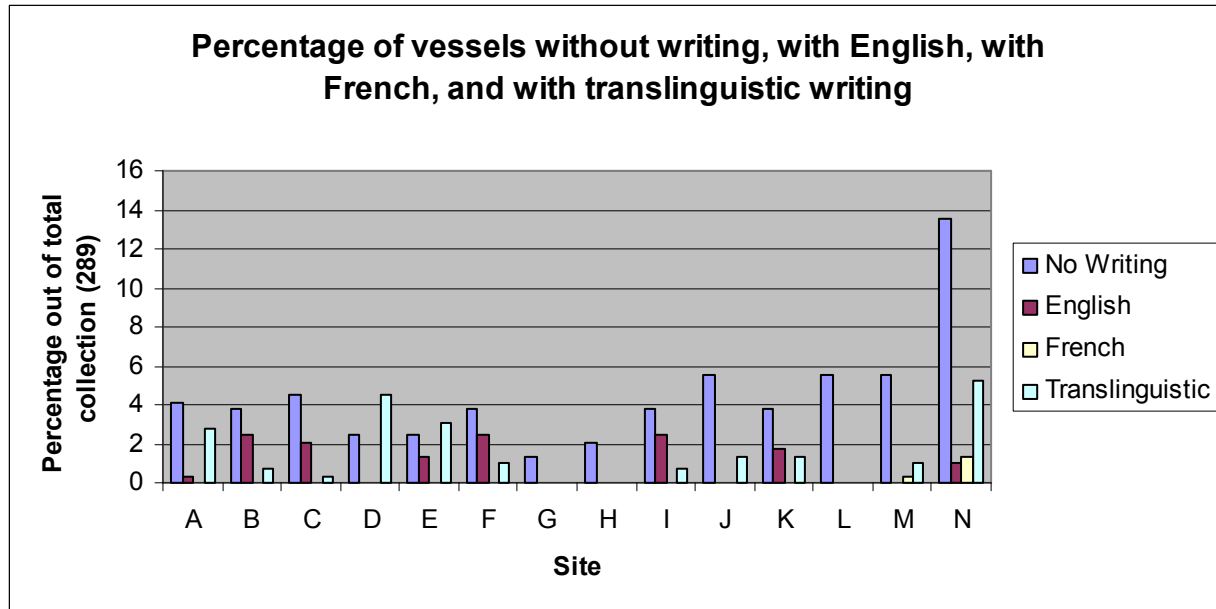


Figure 25 Histogram showing the percentage of vessels without writing, with English writing, with French writing, and with translinguistic writing at each site

Vessels with no writing are available at all sites. At least one translinguistic vessel was procured from all sites which contributed vessels with writing to the sample. 8 sites contributed vessels with writing that is in English only. There are only 5 vessels with writing that is in French only; most (4) of these were from Value Village. [Figures 24 and 25]

At all sites with vessels bearing writing, with the exceptions of sites D and E, there are more vessels with no writing than vessels with English, with French, and with translinguistic writing combined. At sites D and E, there are more vessels with writing than without. Vessels from site N (Value Village) gives the highest percentage (5.2%) of translinguistic vessels among all the sites. This is followed by vessels from site D (4.5%), and vessels from site E (3.1%). [Figures 24 and 25; Appendices D and E]

Three sites did not have any vessels with writing – sites G, H, and L. The absence of any vessels with linguistic motifs at these sites may be influenced by range of variability available at those sites at the time the vessels were procured. However, the variety and number of vessels with writing may not necessarily be the only factor influencing the composition of the sample. Site photos for site G (<http://www.dollarware.org/siteg.html>) do not indicate the presence of vessels with writing. The lack of vessels with writing from site G is therefore likely due to the limited availability of diversity and number of vessels at this particular site. This is not the case with sites H and L. Site photos for these locations (<http://www.dollarware.org/siteh.html> and <http://www.dollarware.org/sitel.html>) indicate the presence of vessels with writing at these locations. This suggests that vessels obtained from each site are not necessarily reflective of the entire range of vessels available for purchase. The compositions of the samples obtained from each site were likely shaped by many indeterminable factors related to the decisions my classmates and I were making when we purchased the vessels.

Visibility of writing

As was mentioned before, some measure of writing visibility was needed, since it is possible that some instances of writing on Dollarware are not intended to be read by potential buyers or users. I decided to use height of writing as a proxy for size of writing, which is in turn an index of visibility. [Appendices B(1) and B(2)]

For each linguistic utterance found on any given vessel, the heights of the tallest and shortest letters were averaged. The average heights of all linguistic utterances found on each vessel were then averaged, such that each vessel had a single value representing height of writing. For each vessel, this number was then divided by the height of the vessel. This produced a ratio that acts measure of writing visibility for each vessel bearing writing.

In addition to this height of writing to height of vessel ratio, another index was needed to account for the frequency of linguistic motifs on a vessel. This was based on the assumption that writing on a vessel with one word, e.g. 'coffee', might not be as easily detected as a vessel with the word 'coffee' written in the same size but repeated ten times throughout the surface of the vessel.

The following were my criteria for counting word/letter frequency for each vessel. It might be convenient to think of a word/letter/number as a 'linguistic unit'. I considered words to be what we typically recognize as such. More often than not, words were groups of letters that had spaces on either side. In some instances (e.g. B-05 "CoffeeCoffeeCoffeeCoffeeCoffee"), not every word had a space on either side of it, but I still counted them as words if I knew they are commonly separated by spaces in most other contexts. Numbers of single or multiple digits were considered a unit. If a full or abbreviated word was adjacent to a number and there was no space between them (e.g. F-03 "May22", I considered the full or abbreviated word plus number to be a unit. A single letter with spaces on either side was considered to be one unit.

Vessels with the Canadian money motif were excluded, as I did not count the number of words or try to document what was written on these vessels. I treated these vessels differently because I thought it was not possible to determine the number of words that was 'conceptually' on the vessels, since real money have writing that is not necessarily detectable by the naked eye, and certainly on the vessels the smaller writing was not discernible. In retrospect, however, I should have counted the number of readable words, and treated these vessels the same way I did the other vessels bearing writing.

After the ratios were calculated for all other vessels with writing, the vessels were sorted according to ratio in ascending order. I then categorized them somewhat arbitrarily (though not completely randomly) into these size groups: extremely large, very large, large, medium, small, very small, and tiny. The divisions were made where the difference between two ratios were relatively higher. [Appendix B(2)]

It was obvious that D-10 should belong in its own category, as the difference in ratios between this vessel and others were significantly higher than differences in ratios between other vessels. Simply looking at this vessel, one would be able to tell that the graphic notation found here is significantly larger than writing motifs present in the collection's vessels. [Figure 26]



Figure 26: D-10
(<http://www.dollarware.org/d-10.jpg>)



Figure 27: B-18
 (<http://www.dollarware.org/b-18.jpg>)



Figure 28: J-17
 (<http://www.dollarware.org/j-17.jpg>)

The D-10 vessel is worth discussing because it is unlike many other vessels in other ways. First of all, the image *is* the graphic notation (i.e. writing). Secondly, the artist has shaped the vessel's morphology according to the form of this image/notation. In this sense it is similar B-18, F-01, F-11, J-05, J-17, and M-02 [Figures 27 to 29]. These vessels all have morphological elements that form part of the image. For example, B-18, J-05, and M-02 have imagery depicting faces, and all three have a bulge on the surface of the vessel forming the nose of the face. J-17 is shaped to conform to an image of a Santa's head. Thirdly, it is especially similar to F-01 and F-11 in that, for all three vessels, the shape of the handle conforms to the shape of what is being depicted. The handle of F-01 depicts a monkey, and the handle of F-11 depicts a pig.



Figure 29: F-01
 (<http://www.dollarware.org/f-01.jpg>)



Figure 30: F-11
 (<http://www.dollarware.org/f-11.jpg>)

D-10 is unique, however, because its handle is in the form of a symbol that is found in writing. As was discussed before, \$ is a cross-culturally understood and used symbol representing the concept of money.

It should suffice to say that writing of large or intermediate sizes are intended to be read. In general, vessels with large writing tend to have lower word/letter/number (linguistic unit) frequencies. Intermediate-sized and small writing tends to have variable linguistic unit frequencies.

There are 14 vessels classified as having tiny writing. It is interesting that, of these, linguistic unit frequencies are lower for vessels with writing size on the larger end of the 'tiny' spectrum. The 5 vessels with the tiniest writing of all have significantly higher linguistic unit frequencies. It may be that artists make the writing on a vessel smaller so that more words can be accommodated (because the size of a vessel limits the size of writing it can carry), or it may be that to make small writing more conspicuous, more writing is added to the design, or both. This suggests that small writing is not always and necessarily not intended to be read.

Nevertheless, it is perhaps not surprising to see that E-03 has the smallest ratio of writing height to vessel height. This result corroborates the hypothesis that the writing on this vessel was not intended to be read (at least in detail and in its entirety). It is puzzling, though, that the artist made the writing such a size that is still discernible to the naked eye, albeit with some extra effort.

Writing and Imagery

Vessels without writing are by nature non-linguistic. We therefore cannot classify them as translinguistic or non-translinguistic. However, because they are not associated with particular languages, they are potentially transcultural if the images they bear can be understood by members of different cultures.

A cross-culturally understood and used symbol is the dollar sign, which is the shape of the handle of D-10. The heart motif is another cross-culturally familiar symbol. It is an icon that represents the concept of love. This symbol is found on the "J' I ♥ CANADA" vessels" (A-02, E-11, M-06), and the presumably Valentine's Day themed vessels (D-16, D-18). The transcultural symbol of the heart was incorporated by the artist of the "J' I ♥ CANADA" vessels into a linguistic utterance.



Figure 31: A-01
(<http://www.dollarware.org/a-01.jpg>)



Figure 32: F-08
(<http://www.dollarware.org/f-08.jpg>)

There is another group of iconographic motifs. These are symbols that are non-linguistic, recognizable cross-culturally, but are referentially specific to particular cultures. In the Dollarware collection, vessels bearing these symbols also have writing.

One example of these icons is the maple leaf [Figure 31], which is present on 18 of the vessels (A-01, A-03, A-04, A-05, A-6, A-07, A-11, D-02, D-04, D-06, E-07, E-18, J-03, J-06, J-07, J-13, K-02, K-03). The maple leaf is a Canadian national symbol, and on the vessels, its presence co-occurs with the presence of the word "Canada" 100% of the time.

Another such cross-culturally familiar but referentially specific icon is the shamrock [Figure 32], a symbol of Ireland. F-08, which bears this symbol, is likely a St. Patrick’s Day themed vessel. Although symbols like the maple leaf and the shamrock are symbols associated with particular nationalities or cultures, they are nevertheless transcultural by virtue of their ability to communicate a message or concept to members of different cultures.

It is possible that designers incorporate linguistic motifs corresponding with images so as to guide audience interpretation of the message being conveyed. It may be that a maple leaf, unaccompanied by the word Canada, might appear to be a floral motif that is not perceived as referring to Canada. As the informal experiment with C-07 suggests (see P.6), in the absence of corresponding writing identifying what an image is, the audience might not interpret the image in the way the designer had intended. The implication of this is that the presence of both writing and an image describing/depicting the same referent might increase the chances of the intended message being communicated to the audience.

	Image	No image	Total
Writing	104	5	109
No writing	141	39	180
Total	245	44	289
degrees of freedom			1
critical value			3.841459149
chi-square test statistic			15.34365887
P			8.96212E-05

I ran a Chi-square to see if the presence/absence of writing and the presence/absence of images were correlated. [Figure 33; Appendix F]

In classifying the vessels according to these attributes, the distinction between writing and no writing was relatively easy. The distinction between image and no image was more complicated. Vessels that had an exterior of a solid colour and no iconography were classified as having

no image. Those that had different shades of colours were classified as having no image if the region where the different shades met did not form a recognizable geometric motif (like a straight line). If a vessel was of a single solid colour, but had one or more solid lines, that vessel was classified as having an image.

The results show that, at a high level of significance, vessels with writing are more likely to also have images than vessels without writing. From these numbers alone, it is not possible to make inferences about the strategies that artists use in designing their vessels, since the classification of vessels according to these four attributes makes no distinctions between levels of resemblance (i.e. how well an image depicts what it is meant to depict from the audience’s perspective), and levels of association between words and images (i.e. how close the two are in terms of the meaning that can be extracted by the audience).

It would be useful to which kinds of images are not associated with writing. Similarly, one might look at which kinds of writing are associated with which kinds of images, and also which kinds of writing tend not to be accompanied by imagery. I have attempted a preliminary study of this. I first identified all vessels with imagery. I then identified those vessels with both imagery and writing. For each of these vessels (that had both imagery and writing), I identified those vessels that had writing that was *conceptually associated* with the imagery on the same vessels. [Appendix G]

For example, B-5 has bears the linguistic motif “CoffeeCoffeeCoffeeCoffeeCoffee”. Imagery is present but it consists of geometric, not coffee imagery. This was not considered to be a vessel with writing and imagery that corresponded with each other. To take another example, C-02 bears the word “Apple”, repeated twice. An image of an apple is also found on the same vessel. This vessel was considered to be a vessel with writing and imagery that corresponded with each other.

There are 246 vessels (85.1% of 289) with imagery. Of those 246 vessels, 89 (30.8% of 289; 36.2% of 246) have imagery and writing that correspond with each other. Of these 89 vessels, 22 (24.7% of 89) are vessels with a food theme. Coffee themed vessels alone account for 14 (15.7% of 89) of these vessels. 32 (36% of 89) out of 89 vessels have a nationality or geography theme. Canada themed vessels alone account for 30 (33.7% of 89) of these nationality/geography themed vessels. Due to time constraints, vessels with no writing were not similarly categorized. It would be interesting to investigate whether or not particular themes are more or less likely to be accompanied by corresponding writing. Another investigation could be to find out if vessels with certain themes are more likely than other themes to be accompanied by writing that is not associated with the image.

Discussion

Ceramic vessels can be considered to be a medium of communication. Analyzing the writing and imagery on these vessels can give us insights as to who is doing the communicating and who is being communicated to, although this is in no way straightforward to the researcher to determine. There may be numerous unknowable factors influencing how people use or not use ceramic vessels. The only way to be relatively certain of why an individual is using a particular vessel might be to ask.

Simply identifying the languages writing on a vessel belong to does not necessarily reveal who the typical users of that vessel are. It may be that some people purchase vessels without completely understanding everything that is written on it. Perhaps they like the imagery so much that they do mind the presence of writing belonging to a foreign language. Also, just because the writing on a vessel is associated with one particular language does not necessarily mean that the writing is completely incomprehensible to a speaker of another language. The English word "chocolate", for example, is probably recognizable to a French-speaker. Similarly, an English-speaker would likely know that "chocolat" means chocolate in English. There is also the possibility that some people deliberately look for vessels with linguistic irregularities out of personal preference.

It must be remembered, also, that Dollarware vessels were purchased brand new. This means that they are a sample of what was available, i.e. these are vessels that are not (yet) purchased. Value Village ware are essentially discarded vessels because they were bought second hand. These factors might reduce the applicability of this study to real assemblages of ceramic vessels that are actually owned by individuals or groups.

Despite these limitations, my study of Dollarware has yielded many unexpected and interesting findings. As the content, language, style, and size of writing is highly variable, many vessels have very fascinating idiosyncrasies which necessitate detailed inspection and qualitative analysis. Several observations allow us to make inferences about what manufacturers/distributors think about what consumers want, or—in the case of manufacturing errors—what consumers would be likely to overlook or tolerate. Linguistic irregularities are perhaps clues to what vessel designers think 'gets the message across', or perhaps they reflect limited familiarity with conventions in particular languages. Or, as in the case of E-03, perhaps it is also possible for designers to deliberately incorporate gibberish onto vessels.

22% of vessels out of the entire collection are translinguistic, i.e. 22% of vessels bear writing that can be understood across languages. In the process of classifying and analyzing these vessels, I have come to realize that, within the context of this study, there are two specific uses of the term 'translinguistic'. The first refers to a *linguistic utterance* that is understandable across more than one language, the second refers to a *vessel* that has at least one translinguistic linguistic utterance. For instance, E-02 has the word "Latte" on it, which is translinguistic, because it is used in both English and French, while N-47 has an ingredients list for Chicken soup in French and in English. Although no single linguistic utterance on its own is translinguistic, the vessel is translinguistic because it has writing in two languages.

My investigation into the visibility of writing strongly suggests that the writing on E-03 was not intended to be read. First of all, the fact that the writing consists of part English, part gibberish is an initial indicator. Secondly, the small size of the writing makes it inconspicuous. The words would probably not be read by someone glancing at the vessel if it was perched on a shelf. Thirdly, although it had a high linguistic unit frequency, the writing is peripheral to the image of the Christmas tree, making it less visible. The letters on other vessels with tiny writing are either packed close together so they form a visible body of text, or they are scattered such that the surface area they occupy is large enough to be detected by the viewer. The writing on E-03, in contrast, occupies a single line. Moreover, many of the words on E-03 are words found in the lyrics of the Christmas carol, "Deck the Halls". This might give the viewer the impression that they are in fact actually seeing the lyrics to this song.

For vessels with tiny writing, the high frequency of words often 'makes up' for the fact that the writing is so small, thereby increasing the likelihood that the viewer would read it. The high frequency of linguistic units found in association with vessels carrying tiny writing suggests that even tiny writing is often meant to be read. E-03 is therefore a particularly strange find.

My investigation of writing and imagery shows that vessels with writing are more likely to also have images than vessels without writing. C-07 was fascinating because the imagery on it does not resemble chocolate, which is presumably what it is supposed to resemble, as suggested by the high frequency of the word "Chocolate" on the same vessel. It would be interesting to take the study of writing and imagery association further, to see how the presence of one aids, confuses, or makes no difference to the interpretation of the other.

Dollarware are not only vessels intended for carrying liquids; they are also intended for carrying messages. If ceramic vessels are intended to communicate ideas, then who is doing the communicating? And who is being communicated to? The issue is not as simple as the manufacturer communicating to the potential purchaser at a retail outlet.

It might be obvious that vessels with promotional themes, imagery, or writing are intended to communicate the existence of their brand/product/service. Perhaps these vessels were offered as rewards to clients who used that brand/product/service. This raises the question of why a company would give a promotional vessel to a customer, if that customer already knows of and uses the brand/product/service. It is likely that the company does this with the assumption that other individuals who come into contact with a consumer might see the vessel, and hence become more aware of the existence of that brand/product/service. It is possible that a user of a promotional vessel wants to communicate brand loyalty to others, or to communicate the fact that they use a particular product or service (perhaps because it accrues prestige to let others know). There could be other factors involved, however, in the decision to use a promotional vessel, such as convenience or indifference.

Several vessels suggest that the buyers of the vessels may not be end-users. Vessels that have celebratory remarks like 'Happy Birthday' (e.g. B-02, B-10), or greetings like 'Hope You're Feeling Better!' (K-13) belong to this group. Other examples might be vessels with written expressions of love (e.g. D-16, D-18). These vessels are likely purchased by customers who intend to give them away to individuals they want to communicate certain messages to.

Many vessels communicate group identity or personal identity. For example, vessels with the word "Canada" (e.g. A-01, A-02) communicate a Canadian identity, or at least a sense of affinity with the Canadian identity. Vessels with zodiacal motifs (e.g. B-19, F-03) communicate personal identity, though they may also communicate group identity among members of a zodiac sign to a certain extent. Vessels with occupational (e.g. F-17, I-01) and age (e.g. K-11) themes may also express the identity of their users. F-07, which says "FORGET LOVE, I'D RATHER FALL FOR CHOCOLATE" alerts us to the possibility that vessels with food themes may also be expressions of individuality. Another way in which people may

choose to display their identities is through the use of vessels with writing belonging to a particular language.

Polly Wiessner (1983), an anthropologist who studied stylistic variability of Kalahari San projectile points, draws a distinction between emblematic style and assertive style. According to Wiessner (1983:257), emblematic style "has a distinct referent and transmits a clear message to a defined target population", and it communicates "information about the existence of groups and boundaries". Assertive style, on the other hand, "is personally based and... carries information supporting individual identity" (1983:258). Wiessner's distinction might also be applicable to ceramic vessels with imagery and writing. Perhaps emblematic style corresponds with translinguistic writing and transcultural images on ceramic vessels, and assertive style corresponds with writing and imagery that are more amenable to expressions of individual identity. National symbols, for example, are emblematic in that they refer to a specific nation or culture, but are understood across nations or cultures. Assertive symbols may be those words or icons, like brand names or zodiac signs, that are easily appropriated by individuals to express their uniqueness.

To conclude, vessels can convey a message from an individual to all other individuals. Sometimes this message is about the person's individual identity, preferences, and experiences; sometimes it is about his or her group identity. Vessels can also convey a message from one person to another. Groups (e.g. companies) may also use vessels to communicate a message (related to a product/service) to individuals. E-03 suggests an interesting possibility: vessels can create the impression that it is communicating a message without actually communicating that message accurately.

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Appendix A: Inventory of writing on vessels

Vessel name	Writing	Comments	Image (excluding words)	Language
A01	CANADA (x2)		Maple leaf	- translinguistic
A02	J' I ♥ CANADA		Hearts, Canadian flag	- translinguistic
A03	Canada (x2)		Maple leaf	- translinguistic
A04	CANADA (x6)		Maple leaf symbols	- translinguistic
A05	CANADA		Maple leaf symbols, happy faces	- translinguistic
A06	CANADA (x2)		Maple leaf	- translinguistic
A07	Canada (x2)		Maple leaf	- translinguistic
A08	-			
A09	-			
A10	CHOWDER		Fish, fishnet	- English
A11	CANADA		Maple leaf	- translinguistic
A12			Fruits, leaves	
A13	-			
A14	-			
A15			Vertical lines	
A16			Xmas trees, Santa, snowman, snow	
A17			Dog with glasses	
A18			Fruits	
A19			Leaves	
A20			Horizontal lines	
A21			Vertical lines	
B01	CAFÉ COFFEE break COFFEE	Some partial words	Cup and saucer, mugs, coffee beans	- translinguistic
B02	Happy Birthday		Presents, balloons, geometric motifs	- English only
B03			Happy faces, party hats, ribbons	
B04	-			
B05	Coffee (x5)		Geometric motifs	- English only
B06	[words on \$50 bill]		Canadian 50 dollar bill	- translinguistic
B07			Geometric motifs	
B08	-			
B09			Geometric motif, floral motif?	
B10	HAPPY BIRTHDAY To You!		Balloons, geometric motifs	- English only
B11	Strong Coffee Coffee		Cup and saucer, coffee beans	- English only
B12	Baa		Sheep, flower, geometric motifs	- English only
B13			Geometric motifs	
B14			Cat, geometric	

			motifs	
B15	Meow		Cat, geometric motifs	- English only
B16			Geometric motifs	
B17			Deer	
B18			Winking face	
B19	SCORPIO OCT.23 – NOV.21		Scorpion with geometric motifs	- English only
B20			Flowers	
C01	COFFEE (x11)	The words coffee are in different fonts	Coffee mug, jar with coffee beans	- English only
C02	Apple (x2)		Apple	- English only
C03	APPLE (x3)		Apple, floral motif	- English only
C04	-			
C05			Pear, geometric motifs	
C06			Dogs fighting	
C07	Chocolate (x many)	Some partial words; different sizes of words; image doesn't really resemble chocolate	Rectangles (supposed to be pieces of chocolate?)	- English only
C08	Delightful as a Dragonfly		Dragonfly, geometric motif	- English only
C09	-			
C10			Teddy bear, pillows	
C11			Teddy bear, tray, champagne bottle, champagne glasses, rose	
C12	-			
C13	ESPRESSO (x4)		Geometric motif, outlines of cup and saucer	- translinguistic
C14	-			
C15			Floral motif	
C16			Lines (where different shades of blue meet)	
C17	-			
C18	-			
C19	Raspberry Strawberry		Strawberries, raspberries, watering can	- English only
C20			Floral motif, geometric motif	
D01	[words on \$10 bill]		Canadian 10 dollar bill	- translinguistic
D02	CANADA (x3)		Maple leaf,	- translinguistic

			geometric motifs	
D03	[See comments]	xoxo motif on some hearts	Hearts, geometric motifs	- translinguistic
D04	CANADA		Maple leaf, geometric motifs	- translinguistic
D05			Geometric motif	
D06	CANADA		Maple leaf, geometric motif	- translinguistic
D07	-			
D08			Dogs	
D09	[words on \$20 bill]		Canadian 20 dollar bill	- translinguistic
D10	[See comments]	\$ handle	Dollar sign handle	- translinguistic
D11	-			
D12	[words on \$50 bill]		Canadian 50 dollar bill	- translinguistic
D13			Duck, flowers, geometric motifs	
D14	CANADA (x2)		Canadian flag	- translinguistic
D15	-			
D16	Love kisses Us You Amour I Love You kiss You Amour Only you evey (some words are repeated several times)	Some partial words; words are scattered; "evey" – sp?	Hearts, geometric motifs, floral patterns	- translinguistic - misspelling
D17	CAFE CREME (x2) Latte macchiato (x2) Cappuccino (x2) Cafe ' latte (x2) Espresso (x2)	No accents; apostrophe	Coffee beans, geometric motifs	- translinguistic
D18	Love You you amour love you I Love You More than everyone	Some partial words; words are scattered	Hearts, geometric motifs, floral patterns, musical motif	- translinguistic
D19	Caffè Latte (x3) CAFFÈ LATTE (x3) CAFFE LATTE	Some instances of "Caffe" are unaccented	Geometric motifs	- translinguistic
D20	-			
E01			Snowman, geometric shapes	
E02	Latte		Cup and saucer	- translinguistic
E03	DECK THE HALLS WRRU MR GHA HF HOOLY FA LA LA LA LA LA LA LA THE MR MAROR TO BE JOLLY LA LA LA LA LA DECK THE HALLS WRRU MR GHA HF HOOLY FA LA LA LA LA LA LA LA THE MR MAROR TO BE JOLLY LA LA LA LA LA	Christmas	Christmas tree, presents	- English only - gibberish
E04	Coffee (x5)		Geometric motifs	- English only
E05		Sticker says		

		"MC MODA CONCEPT"		
E06			Adult and three children	
E07	Canada (multiple)		Maple leaf symbols	- translinguistic
E08	Le cafe☐	The accent is not directly on top of the letter e	Cup and saucer	- translinguistic - incorrectly placed accent
E09	[words on \$50 bill]		Canadian 50 dollar bill	- translinguistic
E10	Coffee (x5)		Geometric motifs	- English only
E11	J' I ♥ CANADA	[heart] = heart symbol	Hearts, Canadian flag	- translinguistic
E12		Christmas	Child, man, woman, teddy bear, candle, bows	
E13	Espresso		Cup and saucer	- translinguistic? (English and Italian)
E14	[words on \$100 bill]		Canadian 100 dollar bill	- translinguistic
E15	[words on \$20 bill]		Canadian 20 dollar bill	- translinguistic
E16			Flowers	
E17	Coffee (x5)		Geometric motifs	- English only
E18	CANADA (x2)		Hearts and maple leaf symbols	- translinguistic
E19			Leaves, geometric motifs	
E20			Vase with flowers	
F01		Handle is monkey-shaped (?)	Monkey head and hand, floral motif	
F02		Rabbit toy inside	Rabbit in clothing, shovel, grass, floral motif	
F03	GEMINI (x2) May22 – June21 (x2) THE TWINS (x2)	Zodiac	Two girls with leaves in their hair	- English only
F04	-			
F05			Chicks in eggshells, floral motifs	
F06	café (x2) coffee (x2) cappuccino (x4) café au lait (x4) latte (x3) espresso (x3)		Geometric motifs	- translinguistic
F07	FORGET LOVE, I'D RATHER FALL FOR CHOCOLATE		Geometric motif, handle made to look like its made of a woven material	- English only

F08	KISS ME! (x2)	Saint Patrick's	Clover leaf, dot over M	- English only
F09	espresso (x3) Café (x2) macchiato columbian machiato Coffee cappuccino latte mocca	"machiato" – sp?		- translinguistic - misspelling
F10	-			
F11		Handle is pig-shaped (?)	Pig head and feet, window?	
F12			Cat	
F13			Rabbit with bow tie, rabbit with flower on ear, geometric motifs	
F14	Make My Heart (x2) Flutter (x2)	Valentine's	Hearts	- English only
F15			Geometric motif	
F16	Spa Girl (x2)		Woman in bathrobe on reclining chair, red nails, geometric motif	- English only
F17	A TEACHER OPENS THE WINDOW TO TOMORROW (x2) ABCDEFGHIJKLMNO PQRSTUVWXYZ (x2)	It says "JAR" over inside an image of a jar	Apple, ball, cat, drum (that doesn't look like a drum), elephant, face, grapes, hand, ice cream, jar (that says JAR on it), kite, leaf, moon, nest, owl (that doesn't look like an owl), pig (that doesn't look like a pig), queen, rabbit (that doesn't look like a rabbit), star, tree, umbrella, violin (that looks more like a guitar, wagon, xylophone, yarn (that doesn't look like yarn), zebra	- English only - alphabets are translinguistic
F18	Moo (x2)		Cows	- English only
F19			Geometric motifs	
F20	MATT GROENING THE SIMPSONS TM & © 2006 FOX		Homer Simpson, hamburger, sausage, chef's hat,	- translinguistic

			geometric motifs	
F21			Flowers	
G01			Geometric motif	
G02			Geometric motif	
G03			Geometric motif	
G04			Santa, floral motifs	
H01			Flowers	
H02			Flowers	
H03			Vertical lines	
H04			Flower	
H05			Flower	
H06			Flowers	
I01	<p>YOU KNOW YOUR JOB IS IN JEOPARDY WHEN:</p> <ul style="list-style-type: none"> o YOUR CO-WORKERS OFTEN SAY: "YOU STILL WORK HERE?" o YOUR OFFICE HAS BEEN MOVED TO THE JANITOR'S CLOSET o THEY CHANGED ALL THE ACCESS CODES AND FORGOT TO TELL YOU o THE OFFICE SUPPLIES HAVE BEEN MOVED TO A SECRET LOCATION 	"Line" in an inconspicuous place – artist's name	Man, window, briefcase, man, water cooler	- English only
I02	<p>THE RULES ABOUT RULES:</p> <ul style="list-style-type: none"> <input type="checkbox"/> I IGNORE THEM <input type="checkbox"/> I DISTORT THEM <input type="checkbox"/> I LIE MY FACE OFF ABOUT THEM <p>PICK ONE</p>		File cabinet, man, computer, keyboard, computer mouse, calendar, apple core, man	- English only
I03	<p>Very good! Today's feeling is what colour. Hello! Under that sky... Have a nice day! Gentle time is on my side. How are you?</p>		Geometric motifs	- English only - strange formulations
I04	<p>coffee coffee (x6) COFFEE (x3) cappuccino espresso (x6)</p>		Coffee bean, line	- translinguistic
I05	Corn (x2)		Corn, geometric motif	- English only
I06			Cats, yarn, pawprints	
I07			Happy faces, party hats, ribbons, confetti	
I08			Geometric motifs	
I09			Geometric motifs	
I10	COFFEE (x4)		Coffee beans, mug	- English only
I11			Flowers, geometric motifs	
I12	<p>Mmmm SOUP'S On yummy</p>		Bowl with soup, crackers, herb?, geometric motifs	- English only
I13	Happy Birthday (x2)		Geometric motifs,	- English only

			presents, balloons	
I14	-			
I15	RIP	Halloween; "RIP" is inconspicuous	Cat, jack-o-lantern, spider web, bats, tree, tombstone, grass, leaves, moon	- translinguistic
I16			Silver line on rim	
I17			Dolphins, clouds, waves	
I18			Dogs, bone motif, soap?, bubbles, small tub	
I19			Silhouettes of cups and saucers, coffee beans, geometric motifs	
I20			Floral motif, geometric motifs, cup and saucer	
J01		Halloween	Moon, stars, Jack- o-lantern, black cat, ghost, witch, bat, spider on web	
J02			Fruits, leaves, flowers	
J03	CANADA (x2)		Maple leaf	- translinguistic
J04			Fruits, leaves, flowers	
J05			Angry face, feet	
J06	CANADA (x3)		Maple leaf	- translinguistic
J07	CANADA (x2)		Maple leaf	- translinguistic
J08			Leaves, abstract motifs	
J09			Abstract motif	
J10			Flowers	
J11			Leaves	
J12			Mickey and Minnie	
J13	Canada (x2)		Maple leaf, geometric motif	- translinguistic
J14		Halloween	Ghost, mummy, Jack-o-lanterns, bats, stars	
J15	-			
J16			Horizontal lines	
J17			Santa's head and face	
J18			Flowers, geometric motifs	
J19			Flowers	
J20			Abstract motifs	
K01	CANADA (x2)		Canadian flag	- translinguistic
K02	CANADA (x3)		Maple leaf	- translinguistic

K03	CANADA		Maple leaf	- translinguistic
K04			Canadian flag	
K05	-			
K06	GRAPE (x3)		Grapes	- English
K07	[See comments]	Letters and numbers	Letters and symbols on playing cards, playing cards	- translinguistic
K08			Roosters, sunflowers	
K09			Apple	
K10			Oval shapes	
K11	Over The Hill & too old to care		Geometric motifs	- English only
K12			Flowers	
K13	Hope You're Feeling Better!		Doctors and patients, needles, pills	- English only
K14			Cups, teapot, flowers, bees	
K15	-			
K16	Strong Coffee Coffee		Coffee beans	- English only
K17	Coffee (x5)		Geometric motifs	- English only
K18	-			
K19				
K20	-			
L01		Christmas	Santa, toys, presents, geometric motif, floral motifs	
L02		Christmas	Santa, children, hearts, toys, presents, geometric motif, floral motifs	
L03		Easter	Rabbit, flowers, geometric motifs	
L04		Easter	Rabbit, flowers, geometric motifs	
L05		Easter	Rabbit, flowers, geometric motifs	
L06			Geometric motifs	
L07		Easter	Rabbit, basket, Easter eggs, floral motif	
L08			Flowers	
L09	-			
L10	-			
L11			Flowers	
L12			Flowers	
L13			Flowers	
L14			Geometric motifs	
L15			Geometric motifs	
L16			Geometric motifs	

M01	-			
M02			Surprised face? Sad face? (Are those tears?)	
M03	F	Letter F	Flowers	- translinguistic - single letter
M04	CAFÉ CACAO (x2)		Sacks, barrels, leaves, coffee beans	- translinguistic
M05			Flowers, geometric motifs	
M06	J' I ♥ CANADA	[heart] = heart symbol	Hearts, Canadian flag	- translinguistic
M07			Fruits	
M08			Flowers	
M09			Flowers	
M10			Flowers	
M11			Flowers, geometric motifs	
M12			Flowers, geometric motifs	
M13			Flowers, geometric motifs	
M14			Flowers, geometric motifs	
M15			Fruits	
M16			Fruits, flowers, leaves, geometric motifs	
M17			Flowers	
M18			Geometric motifs	
M19			Geometric motifs	
M20	ÉLÉMENT TERRE VIERGE (x2) COMPAGNON CAPRICORNE 24 AOÛT – 22 SEPTEMBRE PLANÈTE MERCURY CHIFFRES CHANCEAUX : 7 13 14 15 33 38	Zodiac	Stars, geometric motifs, Earth, planets, Virgo sign, woman, Capricorn sign	- French only
N01			Flowers, floral motif, geometric motif	
N02			Floral motif	
N03	Class of 88		Records, geometric motifs, jukebox, cars	- English only
N04	-			
N05	-			
N06			Irregular line where different shades of colour meet	
N07			Rooster, hen,	

			chicks, insect, geometric motifs	
N08			Flowers	
N09	-			
N10	Serta I shopped & saved at The BRICK www.thebrick.com Friends & Family Sale! CANADA'S 50 BEST MANAGED COMPANIES	Brand name	Sheep	- English only
N11	Cafe latte (x2) CAFE LATTE Cappuccino (x12) CAFE LATTE (x2)	Another "Cafe latte" in faint lettering; no accents	Cup and saucer, coffee beans	- translinguistic - no accents though
N12	LA SENZA (x2) 10 (x2)	Stars with the number 10 inside (faint)	Chicks (with shoes? and glasses), geometric motifs	- translinguistic
N13		Christmas	Silhouettes of cat and yarn on stool, children with hats, candles, piano, presents, clock, teapot, cup and saucer, Santa(?) on rocking chair, Christmas wreath, cat with string, geometric motif	
N14			Cats, geometric motif	
N15			Cat, flowers, fruit basket, table, chair, lamp, window	
N16			Floral motif	
N17			Floral motif, gardening tools	
N18	-			
N19	Edible® ARRANGEMENTS	Store name	Floral motif, basket(?)	- English
N20		Christmas	Teddy bears dancing/hugging, Christmas hats, floral motif	
N21	VALLARTA	Place name (in Mexico)	Flamingo, sun, clouds	- translinguistic - place name
N22	[see comments]	Good morning in various languages		- translinguistic, but it is not the specific utterances that are translinguistic; there are utterances in different languages, making the

				decorations as a whole translinguistic
N23		Christmas	Floral motif, geometric motif	
N24			Floral motif	
N25	Café		Floral motif	- translinguistic
N26			Fruits, leaves, geometric motifs	
N27			Floral motif, geometric motif	
N28			Duck?, geometric motifs	
N29	LOMBARD GLEN	Name of a golf course	Silhouette of man and woman with golf clubs and golf bag	- English only
N30	-			
N31			Fruit, geometric motif	
N32			Floral motif, geometric motif	
N33			Geometric motifs, floral motif	
N34	MA TASSE DES BEAUX JOURS (x2)		Sun, mountains, water, sailing vessel, geometric motifs	- French only
N35	Café			- translinguistic
N36		Easter	Chicks, eggs, eggshells, bow, flowers, grass, geometric motifs	
N37	Lipton (x2)	Brand name	Woman holding mug that says Lipton, silhouette of a man, palm trees, high-rises, cat, bottles, geometric motifs	- translinguistic
N38	LE BONHEUR C'EST CRIER BINGO! BINGO (x4) Gratuit (x4)	Numbers on bingo sheets	Bingo sheets, geometric motif	- French only
N39			Fruits, leaves, geometric motifs	
N40			Boy, girl, picnic basket, picnic blanket, radio, tree	
N41	30 ans ça se fête! Longueuil 2007 CSST La prévention, j'y travaille!		Geometric motif	- French only

N42			Mansion, grass, path, trees, flowers, bench, man, woman, path	
N43			Moon? with face, sun with face, stars, geometric motifs	
N44	Café (x4)			- translinguistic
N45	Les Bleuets Nautiques SKI SAGUENAY, LAC ST-JEAN		Sun, water, anthropomorphized blueberries, water skis	- French only
N46			Lines where different shades of colour meet	
N47	POTAGE AU POULET POTAGE AU POULET 1 petit poulet 3- 4 chopines d'eau Sel et poivre Fines herbes fraîches 1 oignon 1 feuille de laurier 1 feuille de macis CHICKEN SOUP CHICKEN SOUP 1 small Chicken 3- 4 pints Water Salt & Pepper Fresh Herbs 1 Onion 1 Bay Leaf 1 blade Mace		Chicken (dead), salt/pepper shaker, herbs, mushrooms	- translinguistic
N48			Squirrel?	
N49	Tia Maria	Brand name (alcoholic drink)	Palm trees, geometric motifs	- translinguistic
N50	-			
N51	Greece		Moon with face, stars, clouds, buildings, windmill, birds, water, plants	- translinguistic - place name
N52	Cheers!	Christmas	Reindeer in bathtub, wineglass, pillow, towels, geometric motifs	- English only
N53			Flowers, leaves	
N54			Flowers, leaves	
N55			Irregular line where different shades of colour meet	
N56			Bamboo	
N57	Lipton (x2)	Brand name	Woman holding	- translinguistic

			mug that says Lipton, silhouette of a man, palm trees, high-rises,	
N58	Coty (x8)	Brand name (cosmetics)		- translinguistic
N59			Grapes, leaves	
N60		Christmas	Living room, cat, candles, stockings, fireplace, girl, Christmas tree, presents, geometric motifs	
N61			Line	

Appendix B(1): Height of writing to height of vessel ratio and letter/word frequency (sorted by Specimen)

Specimen	Vessel height	Average height of writing	Ratio (height of writing / height of vessel)	Linguistic unit frequency	Specimen	Vessel height	Average height of writing	Ratio (height of writing / height of vessel)	Linguistic unit frequency
A-01	95.9	12	0.125078	2	D-12	97.4			monetary bill motif
A-02	97.4	36.83333	0.378282	3	D-14	96.8	15	0.154959	2
A-03	95.7	12.5	0.130685	2	D-16	96.6	2.5	0.025893	45
A-04	97.5	12	0.123102	6	D-17	128.3	4.7	0.036633	16
A-05	95.6	30	0.313873	1	D-18	96.5	3.5	0.036269	37
A-06	96.2	6	0.062402	2	D-19	131.3	7.444444	0.056698	12
A-07	64.1	8.5	0.132564	2	E-02	148.0	20	0.135135	1
A-10	64.8	4	0.061728	1	E-03	97.5	1	0.010256	56
A-11	100.8	11	0.109084	1	E-04	114.6	3.5	0.030541	5
B-01	103.7	9	0.086789	4	E-07	96.6	12	0.124224	7
B-02	98.5	11.5	0.116751	4	E-08	149.7	20.5	0.136941	2
B-05	113.5	3.5	0.030837	5	E-09	97.3			monetary bill motif
B-06	95.6			monetary bill motif	E-10	116.1	3.5	0.030146	5
B-10	97.4	12.83333	0.131759	4	E-11	100.7	36.83333	0.365773	3
B-11	105.8	6.666667	0.063012	3	E-13	150.8	17.5	0.116048	1
B-12	105.3	7.5	0.071225	1	E-14	97.5			monetary bill motif
B-15	105.8	8	0.075614	1	E-15	97.0			monetary bill motif
B-19	98.9	5	0.050556	3	E-17	116.6	3.5	0.030017	5
C-01	124.1	7.954545	0.064098	11	E-18	96.1	16	0.166493	2
C-02	72.7	3	0.041265	2	F-03	125.7	4.333333	0.034474	10
C-03	102.0	4.5	0.044118	3	F-06	93.2	4.125	0.04426	18
C-07	124.4	4.25	0.034164	48	F-07	99.1	8	0.080694	7
C-08	121.0	5	0.041322	4	F-08	106.2	17	0.160075	2
C-13	45.3	2	0.044199	4	F-09	106.5	11.25	0.105594	12
C-19	109.2	4.5	0.041209	2	F-14	108.0	7	0.064815	8
D-01	98.4			monetary bill motif	F-16	105.5	4	0.037915	4
D-02	91.4	9	0.098468	3	F-17	96.1	4.75	0.049428	66
D-03	138.6	3	0.021648	24	F-18	94.5	3.75	0.039683	2
D-04	96.5	43	0.445596	1	F-20	94.4	2.5	0.026483	9
D-06	98.1	16	0.163182	1	I-01	96.6	1.5	0.015528	46
D-09	97.8			monetary bill motif	I-02	96.1	3	0.031234	19
D-10	94.4	83	0.879237	1	I-03	103.8	1.5	0.014451	24

Specimen	Vessel height	Average height of writing	Ratio (height of writing / height of vessel)	Linguistic unit frequency	Specimen	Vessel height	Average height of writing	Ratio (height of writing / height of vessel)	Linguistic unit frequency
I-04	49.3	3	0.060914	27	N-38	88.8	3	0.033784	18
I-05	82.1	5	0.060901	2	N-41	95.2	4.6	0.048319	12
I-10	103.5	8	0.077295	4	N-44	91.2	19	0.208333	4
I-12	85.0	15	0.176471	4	N-45	95.7	14.75	0.154127	7
I-13	94.9	11.5	0.12118	2	N-47	83.5	4	0.047904	53
I-15	96.7	4	0.041386	1	N-49	88.8	5	0.056306	2
J-03	92.0	5	0.054348	2	N-51	98.1	6.5	0.066259	1
J-06	97.1	9	0.092688	3	N-52	92.7	19.5	0.210356	1
J-07	95.5	5	0.052356	2	N-57	102.8	3	0.029183	2
J-13	94.6	12	0.12685	2	N-58	96.8	6	0.061983	8
K-01	96.8	15	0.154959	2					
K-02	97.7	8	0.081883	3					
K-03	93.8	8	0.085288	3					
K-07	101.4	7.5	0.073964	18					
K-11	95.4	4.75	0.04979	8					
K-13	95.7	7	0.073145	4					
K-16	115.9	6.666667	0.057521	3					
K-17	114.2	3.5	0.030648	3					
M-03	101.2	52	0.513682	5					
M-04	99.9	9	0.090126	4					
M-06	97.8	36.83333	0.376619	3					
M-20	93.2	4.909091	0.052673	20					
N-03	88.1	14	0.15891	3					
N-10	95.2	4	0.042017	13					
N-11	106.2	5.357143	0.050444	22					
N-12	151.1	5	0.033091	9					
N-19	120.9	6.75	0.055831	2					
N-21	98.4	5	0.050813	1					
N-22	121.4	8.863636	0.073012	17					
N-25	90.4	6	0.066372	4					
N-29	94.7	14	0.147835	2					
N-34	99.1	5	0.050454	10					
N-35	123.4	44	0.356564	1					
N-37	98.5	3	0.030457	2					

Appendix B(2): Height of writing to height of vessel ratio and letter/word/number frequency (sorted by ratio)

specimen	ratio	linguistic unit frequency	size of writing	specimen	ratio	linguistic unit frequency	size of writing
E-03	0.010256	56	tiny	N-11	0.050444	22	small
I-03	0.014451	24	tiny	N-34	0.050454	10	small
I-01	0.015528	46	tiny	B-19	0.050556	3	small
D-03	0.021648	24	tiny	N-21	0.050813	1	small
D-16	0.025893	45	tiny	J-07	0.052356	2	small
F-20	0.026483	9	tiny	M-20	0.052673	20	small
N-57	0.029183	2	tiny	J-03	0.054348	2	small
E-17	0.030017	5	tiny	N-19	0.055831	2	medium
E-10	0.030146	5	tiny	N-49	0.056306	2	medium
N-37	0.030457	2	tiny	D-19	0.056698	12	medium
E-04	0.030541	5	tiny	K-16	0.057521	3	medium
K-17	0.030648	3	tiny	I-05	0.060901	2	medium
B-05	0.030837	5	tiny	I-04	0.060914	27	medium
I-02	0.031234	19	tiny	A-10	0.061728	1	medium
N-12	0.033091	9	very small	N-58	0.061983	8	medium
N-38	0.033784	18	very small	A-06	0.062402	2	medium
C-07	0.034164	48	very small	B-11	0.063012	3	medium
F-03	0.034474	10	very small	C-01	0.064098	11	medium
D-18	0.036269	37	very small	F-14	0.064815	8	medium
D-17	0.036633	16	very small	N-51	0.066259	1	medium
F-16	0.037915	4	very small	N-25	0.066372	4	medium
F-18	0.039683	2	very small	B-12	0.071225	1	medium
C-19	0.041209	2	very small	N-22	0.073012	17	medium
C-02	0.041265	2	very small	K-13	0.073145	4	medium
C-08	0.041322	4	very small	K-07	0.073964	18	medium
I-15	0.041386	1	very small	B-15	0.075614	1	medium
N-10	0.042017	13	small	I-10	0.077295	4	medium
C-03	0.044118	3	small	F-07	0.080694	7	medium
C-13	0.044199	4	small	K-02	0.081883	3	medium
F-06	0.04426	18	small	K-03	0.085288	3	medium
N-47	0.047904	53	small	B-01	0.086789	4	medium
N-41	0.048319	12	small	M-04	0.090126	4	medium
F-17	0.049428	66	small	J-06	0.092688	3	medium
K-11	0.04979	8	small	D-02	0.098468	3	medium

specimen	ratio	linguistic unit frequency	size of writing
F-09	0.105594	12	large
A-11	0.109084	1	large
E-13	0.116048	1	large
B-02	0.116751	4	large
I-13	0.12118	2	large
A-04	0.123102	6	large
E-07	0.124224	7	large
A-01	0.125078	2	large
J-13	0.12685	2	large
A-03	0.130685	2	large
B-10	0.131759	4	large
A-07	0.132564	2	large
E-02	0.135135	1	large
E-08	0.136941	2	large
N-29	0.147835	2	large
N-45	0.154127	7	large
D-14	0.154959	2	large
K-01	0.154959	2	large
N-03	0.15891	3	large
F-08	0.160075	2	large
D-06	0.163182	1	large
E-18	0.166493	2	large
I-12	0.176471	4	large
N-44	0.208333	4	large
N-52	0.210356	1	large
A-05	0.313873	1	very large
N-35	0.356564	1	very large
E-11	0.365773	3	very large
M-06	0.376619	3	very large
A-02	0.378282	3	very large
D-04	0.445596	1	very large
M-03	0.513682	5	very large
D-10	0.879237	1	extremely large

Appendix C Frequency and percentage of vessels with no writing, with English, with French, and with translinguistic writing for the whole collection (Dollarware + Value Village ware)

	Frequency	% out of total (289)
No writing	180	62
English only	40	14
French only	5	2
Translinguistic	64	22
	289	100

Appendix D Frequency and percentage (out of number of vessels from each site and out of 289) of vessels with no writing, with English, with French, and with translinguistic writing at each site

Site	English	% of assemblage	% out of total (289)	French	% of assemblage	% out of total (289)	Trans-linguistic	% of assemblage	% out of total (289)
A	1	2.50	0.35	0	0.00	0.00	8	12.50	2.77
B	7	17.50	2.42	0	0.00	0.00	2	3.13	0.69
C	6	15.00	2.08	0	0.00	0.00	1	1.56	0.35
D	0	0.00	0.00	0	0.00	0.00	13	20.31	4.50
E	4	10.00	1.38	0	0.00	0.00	9	14.06	3.11
F	7	17.50	2.42	0	0.00	0.00	3	4.69	1.04
G	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
H	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
I	7	17.50	2.42	0	0.00	0.00	2	3.13	0.69
J	0	0.00	0.00	0	0.00	0.00	4	6.25	1.38
K	5	12.50	1.73	0	0.00	0.00	4	6.25	1.38
L	0	0.00	0.00	0	0.00	0.00	0	0.00	0.00
M	0	0.00	0.00	1	20.00	0.35	3	4.69	1.04
N	3	7.50	1.04	4	80.00	1.38	15	23.44	5.19
	40		13.84	5		1.73	64		22.15

Appendix E Percentage (out of 289) of vessels with and without writing, and percentage (out of 289) of vessels with English, French, and translinguistic writing

Site	No Writing (% of total)	Writing (% of total)	English (% of total)	French (% of total)	Translinguistic (% of total)
A	4.15	3.11	0.35	0.00	2.77
B	3.81	3.11	2.42	0.00	0.69
C	4.50	2.42	2.08	0.00	0.35
D	2.42	4.50	0.00	0.00	4.50
E	2.42	4.50	1.38	0.00	3.11
F	3.81	3.46	2.42	0.00	1.04
G	1.38	0.00	0.00	0.00	0.00
H	2.08	0.00	0.00	0.00	0.00
I	3.81	3.11	2.42	0.00	0.69
J	5.54	1.38	0.00	0.00	1.38
K	3.81	3.11	1.73	0.00	1.38
L	5.54	0.00	0.00	0.00	0.00
M	5.54	1.38	0.00	0.35	1.04
N	13.49	7.61	1.04	1.38	5.19
	62.28	37.72	1.73	22.15	22.15

Appendix F: Vessels with and without writing, images, translinguistic writing, and images that correspond with writing on the same vessel

Specimen	Linguistic motif	Image	Translinguistic	Corresponding image	Specimen	Linguistic motif	Image	Translinguistic	Corresponding image
A-01	1	1	1	1	B-12	1	1	0	1
A-02	1	1	1	1	B-13	0	1	0	0
A-03	1	1	1	1	B-14	0	1	0	0
A-04	1	1	1	1	B-15	1	1	0	1
A-05	1	1	1	1	B-16	0	1	0	0
A-06	1	1	1	1	B-17	0	1	0	0
A-07	1	1	1	1	B-18	0	1	0	0
A-08	0	0	0	0	B-19	1	1	0	1
A-09	0	0	0	0	B-20	0	1	0	0
A-10	1	1	0	1	C-01	1	1	0	1
A-11	1	1	1	1	C-02	1	1	0	1
A-12	0	1	0	0	C-03	1	1	0	1
A-13	0	0	0	0	C-04	0	0	0	0
A-14	0	0	0	0	C-05	0	1	0	0
A-15	0	1	0	0	C-06	0	1	0	0
A-16	0	1	0	0	C-07	1	1	0	1
A-17	0	1	0	0	C-08	1	1	0	1
A-18	0	1	0	0	C-09	0	0	0	0
A-19	0	1	0	0	C-10	0	1	0	0
A-20	0	1	0	0	C-11	0	1	0	0
A-21	0	1	0	0	C-12	0	0	0	0
B-01	1	1	1	1	C-13	1	1	1	1
B-02	1	1	0	1	C-14	0	0	0	0
B-03	0	1	0	0	C-15	0	1	0	0
B-04	0	0	0	0	C-16	0	0	0	0
B-05	1	1	0	0	C-17	0	0	0	0
B-06	1	1	1	1	C-18	0	0	0	0
B-07	0	1	0	0	C-19	1	1	0	1
B-08	0	0	0	0	C-20	0	1	0	0
B-09	0	1	0	0	D-01	1	1	1	1
B-10	1	1	0	1	D-02	1	1	1	1
B-11	1	1	0	1	D-03	1	1	1	1

Specimen	Linguistic motif	Image	Translinguistic	Corresponding image	Specimen	Linguistic motif	Image	Translinguistic	Corresponding image
D-04	1	1	1	1	E-19	0	1	0	0
D-05	0	1	0	0	E-20	0	1	0	0
D-06	1	1	1	1	F-01	0	1	0	0
D-07	0	0	0	0	F-02	0	1	0	0
D-08	0	1	0	0	F-03	1	1	0	1
D-09	1	1	1	1	F-04	0	0	0	0
D-10	1	1	1	1	F-05	0	1	0	0
D-11	0	0	0	0	F-06	1	1	1	0
D-12	1	1	1	1	F-07	1	1	0	0
D-13	0	1	0	0	F-08	1	1	0	1
D-14	1	1	1	1	F-09	1	0	1	0
D-15	0	0	0	0	F-10	0	0	0	0
D-16	1	1	1	1	F-11	0	1	0	0
D-17	1	1	1	1	F-12	0	1	0	0
D-18	1	1	1	1	F-13	0	1	0	0
D-19	1	1	1	0	F-14	1	1	0	1
D-20	0	0	0	0	F-15	0	1	0	0
E-01	0	1	0	0	F-16	1	1	0	1
E-02	1	1	1	1	F-17	1	1	0	1
E-03	1	1	0	1	F-18	1	1	0	1
E-04	1	1	0	0	F-19	0	1	0	0
E-05	0	0	0	0	F-20	1	1	1	1
E-06	0	1	0	0	F-21	0	1	0	0
E-07	1	1	1	1	G-01	0	1	0	0
E-08	1	1	1	1	G-02	0	1	0	0
E-09	1	1	1	1	G-03	0	1	0	0
E-10	1	1	0	0	G-04	0	1	0	0
E-11	1	1	1	1	H-01	0	1	0	0
E-12	0	1	0	0	H-02	0	1	0	0
E-13	1	1	1	1	H-03	0	1	0	0
E-14	1	1	1	1	H-04	0	1	0	0
E-15	1	1	1	1	H-05	0	1	0	0
E-16	0	1	0	0	H-06	0	1	0	0
E-17	1	1	0	0	I-01	1	1	0	1
E-18	1	1	1	1	I-02	1	1	0	1

Specimen	Linguistic motif	Image	Translinguistic	Corresponding image	Specimen	Linguistic motif	Image	Translinguistic	Corresponding image
I-03	1	1	0	0	J-18	0	1	0	0
I-04	1	1	1	1	J-19	0	1	0	0
I-05	1	1	0	0	J-20	0	1	0	0
I-06	0	1	0	0	K-01	1	1	1	1
I-07	0	1	0	0	K-02	1	1	1	1
I-08	0	1	0	0	K-03	1	1	1	1
I-09	0	1	0	0	K-04	0	1	0	0
I-10	1	1	0	1	K-05	0	0	0	0
I-11	0	1	0	0	K-06	1	1	0	1
I-12	1	1	0	1	K-07	1	1	1	1
I-13	1	1	0	1	K-08	0	1	0	0
I-14	0	0	0	0	K-09	0	1	0	0
I-15	1	1	1	1	K-10	0	1	0	0
I-16	0	0	0	0	K-11	1	1	0	0
I-17	0	1	0	0	K-12	0	1	0	0
I-18	0	1	0	0	K-13	1	1	0	1
I-19	0	1	0	0	K-14	0	1	0	0
I-20	0	1	0	0	K-15	0	0	0	0
J-01	0	1	0	0	K-16	1	1	0	1
J-02	0	1	0	0	K-17	1	1	0	0
J-03	1	1	1	1	K-18	0	0	0	0
J-04	0	1	0	0	K-19	0	1	0	0
J-05	0	1	0	0	K-20	0	0	0	0
J-06	1	1	1	1	L-01	0	1	0	0
J-07	1	1	1	1	L-02	0	1	0	0
J-08	0	1	0	0	L-03	0	1	0	0
J-09	0	1	0	0	L-04	0	1	0	0
J-10	0	1	0	0	L-05	0	1	0	0
J-11	0	1	0	0	L-06	0	1	0	0
J-12	0	1	0	0	L-07	0	1	0	0
J-13	1	1	1	1	L-08	0	1	0	0
J-14	0	1	0	0	L-09	0	0	0	0
J-15	0	0	0	0	L-10	0	0	0	0
J-16	0	1	0	0	L-11	0	1	0	0
J-17	0	1	0	0	L-12	0	1	0	0

Specimen	Linguistic motif	Image	Translinguistic	Corresponding image	Specimen	Linguistic motif	Image	Translinguistic	Corresponding image
L-13	0	1	0	0	N-12	1	1	1	0
L-14	0	1	0	0	N-13	0	1	0	0
L-15	0	1	0	0	N-14	0	1	0	0
L-16	0	1	0	0	N-15	0	1	0	0
M-01	0	0	0	0	N-16	0	1	0	0
M-02	0	1	0	0	N-17	0	1	0	0
M-03	1	1	1	1	N-18	0	0	0	0
M-04	1	1	0	1	N-19	1	1	1	1
M-05	0	1	0	0	N-20	0	1	0	0
M-06	1	1	0	1	N-21	1	1	1	1
M-07	0	1	0	0	N-22	1	0	1	0
M-08	0	1	0	0	N-23	0	1	0	0
M-09	0	1	0	0	N-24	0	1	0	0
M-10	0	1	0	0	N-25	1	1	1	1
M-11	0	1	0	0	N-26	0	1	0	0
M-12	0	1	0	0	N-27	0	1	0	0
M-13	0	1	0	0	N-28	0	1	0	0
M-14	0	1	0	0	N-29	1	1	0	1
M-15	0	1	0	0	N-30	0	0	0	0
M-16	0	1	0	0	N-31	0	1	0	0
M-17	0	1	0	0	N-32	0	1	0	0
M-18	0	1	0	0	N-33	0	1	0	0
M-19	0	1	0	0	N-34	1	1	0	1
M-20	1	1	0	1	N-35	1	0	1	0
N-01	0	1	0	0	N-36	0	1	0	0
N-02	0	1	0	0	N-37	1	1	1	1
N-03	1	1	0	0	N-38	1	1	0	1
N-04	0	0	0	0	N-39	0	1	0	0
N-05	0	0	0	0	N-40	0	1	0	0
N-06	0	0	0	0	N-41	1	1	0	0
N-07	0	1	0	0	N-42	0	1	0	0
N-08	0	1	0	0	N-43	0	1	0	0
N-09	0	0	0	0	N-44	1	0	1	0
N-10	1	1	1	1	N-45	1	1	0	1
N-11	1	1	1	1	N-46	0	0	0	0

Specimen	Linguistic motif	Image	Translinguistic	Corresponding image
N-47	1	1	1	1
N-48	0	1	0	0
N-49	1	1	1	1
N-50	0	0	0	0
N-51	1	1	1	1
N-52	1	1	0	1
N-53	0	1	0	0
N-54	0	1	0	0
N-55	0	0	0	0
N-56	0	1	0	0
N-57	1	1	1	1
N-58	1	1	1	0
N-59	0	1	0	0
N-60	0	1	0	0
N-61	0	1	0	0
Number of vessels with this attribute	109	246	62	90
Number of vessels without this attribute	180	43	227	199

Appendix G: Vessels with imagery and writing that corresponds with the imagery and their categories

Specimen	Category	Specimen	Category	Specimen	Category
A-01	Nationality (Canada)	D-10	Money	J-03	Nationality (Canada)
A-02	Nationality (Canada)	D-12	Nationality (Canada)	J-06	Nationality (Canada)
A-03	Nationality (Canada)	D-14	Nationality (Canada)	J-07	Nationality (Canada)
A-04	Nationality (Canada)	D-16	Celebratory (Valentine's)	J-13	Nationality (Canada)
A-05	Nationality (Canada)	D-17	Food (coffee)	K-01	Nationality (Canada)
A-06	Nationality (Canada)	D-18	Celebratory (Valentine's)	K-02	Nationality (Canada)
A-07	Nationality (Canada)	E-02	Food (coffee)	K-03	Nationality (Canada)
A-10	Food (soup)	E-03	Celebratory (Christmas)	K-06	Food (grape)
A-11	Nationality (Canada)	E-07	Nationality (Canada)	K-07	Recreation (cards)
B-01	Food (coffee)	E-08	Food (coffee)	K-13	Occupation (doctor)
B-02	Celebratory (Birthday)	E-09	Nationality (Canada)	K-16	Food (coffee)
B-06	Nationality (Canada)	E-11	Nationality (Canada)	M-03	Single letter
B-10	Celebratory (Birthday)	E-13	Food (coffee)	M-04	Food (coffee)
B-11	Food (coffee)	E-14	Nationality (Canada)	M-06	Nationality (Canada)
B-12	Animal (sheep)	E-15	Nationality (Canada)	M-20	Zodiac
B-15	Animal (cat)	E-18	Nationality (Canada)	N-10	Brand (The Brick)
B-19	Zodiac	F-03	Zodiac	N-11	Food (coffee)
C-01	Food (coffee)	F-08	Celebratory (St Patrick's)	N-21	Nationality (Vallarta, Mexico)
C-02	Food (fruit)	F-14	Celebratory (Valentine's)	N-25	Food (coffee)
C-03	Food (fruit)	F-16	Recreation (spa)	N-29	Recreation (golfing)
C-07	Food (chocolate)	F-17	Occupation (teacher)	N-34	Recreation (sailing)
C-08	Animal (insect)	F-18	Animal (cow)	N-37	Brand (Lipton)
C-13	Food (coffee)	F-20	Cartoon (Simpsons)	N-38	Recreation (game)
C-19	Food (fruits)	I-01	Occupation (office worker)	N-45	Recreation (skiing)
D-01	Nationality (Canada)	I-02	Occupation (office worker)	N-47	Food (soup)
D-02	Nationality (Canada)	I-04	Food (coffee)	N-49	Brand (Tia Maria)
D-03	Celebratory (Valentine's)	I-10	Food (coffee)	N-51	Nationality (Greece)
D-04	Nationality (Canada)	I-12	Food (soup)	N-52	Celebratory (Christmas)
D-06	Nationality (Canada)	I-13	Celebratory (Birthday)		
D-09	Nationality (Canada)	I-15	Celebratory (Halloween)		
N-57	Brand (Lipton)				