

Visible Language

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research

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a study analyzing the playful use of punctuation by children 9-11 and the design-like process they use to communicate effectively, with implications for how the writing process is conceptualized

Simpson

42 – 81

study exploring the integration of visual cultural elements in emerging scripts, suggesting that incorporating visual cultural elements in script design could play a significant role in promoting cultural continuity, supporting language preservation

VL Editors

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announcing changes in how *Visible Language* is published

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Children as Designers of Texts: Punctuating Persuasive Writing



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Abstract

Framed within literacy education and applied linguistics, children's playful punctuation is considered within a paradigm of 'writing as design'. Drawing particularly on the work of Sharples (1999), the article examines data from a repeat design study of 9-11 year old children tackling a persuasive description task. The data showed evidence of children making plans, setting goals and satisfying constraints to fulfil communicative effect. As well as being testament to children's ingenuity in using punctuation in creative ways, the findings have implications for how the writing process is conceptualised and for how writing is taught.

Keywords

Children's writing
Advertisements
Design
Playful punctuation



Introduction

This article considers young writers as designers of texts (Sharples, 1999; Myhill, 2009) who creatively shape meaning through textual ideas and layout. The main focus is on punctuation and particularly how children use punctuation in playful ways. The article extends recent work on language play in general (Beard & Burrell, 2021) by examining children's use of playful punctuation in persuasive writing. The data are from an earlier study of writing development in the 9–11 age-range that initially focused on a range of linguistic and text-level features. During the data analysis it became apparent that the children's writing also contained a range of ludic (playful) features, including the use of playful punctuation, and this was then subjected to further study. The present article extends this study by re-examining the data to identify features that are commensurate with a view of young writers as designers of texts.

The article draws on an established body of theory, criticism and discourse that directly addresses notions of designing one's own writing, namely 'design authorship' or 'designer as author'. According to the design critic, Rick Poyner (2003, p. 118), 'The emergence of the "designer as author" is one of the key ideas in graphic design of the postmodern period.' A significant moment was the publication of an essay by Michael Rock entitled 'The Designer as Author' in 1996 exploring the implications and possibilities of designers taking on an authorial role. The term gained widespread currency in the United States in the late 1990s and is reflected, for example, in the establishment of the first Master of Fine Arts degree in design based on the idea of 'The Designer as Author' at the School of Visual Arts in New York in 1999 (Poyner, 2003). The term emphasizes the role of the designer as a creator and originator of visual communication. It invites exploration of how designers contribute to the creative process and shape visual communication by infusing it with their own unique perspective, style and intent. The term also invites exploration of how designers navigate the interplay between the intentions of the author and the interpretation of the reader.

Writing as Design

Although the article is principally framed within literacy education and applied linguistics, the conceptual framework is also derived from Sharples' (1999) avowedly eclectic work on 'writing as creative design.' Sharples views 'the writer as a creative thinker and designer of text' (1999, p. 6). In this conceptualization, 'writing as design involves problem solving, when the writer sets goals, makes plans and satisfies constraints, but these processes support the broader purpose of writing which is to communicate with and through the text to achieve a human effect.' Writing is thus 'a cognitive process, creative act and a cultural activity' (Sharples, 1999, p. 71). As Maun

and Myhill (2005, p. 10) point out, Sharples' view of design includes 'not only the idea of visual design and spatial layout, but also the idea of semantic and linguistic choices being intrinsic to the design process.'

Sharples (1999, p. 72) provides a diagrammatic summary of the writing process, in which the main components of 'compose', 'plan' and 'revise' are linked by a series of skills and processes. Interestingly, however, there is no direct reference to punctuation. This relative neglect of punctuation is evident in other publications on the writing process. For example, the influential work of Graves (1983) relegates punctuation to a relatively subservient 'secretarial' role, with little attention being given to strategic design elements. Hayes and Flower's (1980) influential model lacks detail in terms of translation processes (turning plans and ideas into text to meet goals). While Berninger and Swanson (1994) adaption of the original Hayes and Flower model elaborated on these processes, punctuation was considered part of transcription (rather than an integral part of text generation). Alamargot and Fayol (2009) argue that models of text composition remain relatively imprecise in relation to the linguistic and orthographic processes involved in formulation. In contrast, the present article explores how playful punctuation can play a more central role in the design of written texts.

Punctuation

Punctuation is an integral part of written English, as it is in many written languages. The topic has been discussed at length by distinguished linguists (e.g. Crystal, 2016) and by professional writers (e.g. Truss, 2003; Waterhouse, 1994; Houston, 2015). As well as a relative neglect of punctuation in work on writing as design, little work has been done on punctuation in children's writing, despite its educational significance (Ravid & Tolchinsky, 2002). The main empirical work that has been done has used an ethnographic perspective (e.g. Hall, 1998, 2009). Even less work has been done on how children use punctuation in playful ways, which is specifically examined in the present article.

Punctuation can help us establish meaning in text. It can be defined as the use of spacing, conventional signs, and certain typographical devices as aids to the understanding and correct reading, both silently and aloud, of handwritten and printed texts (Brown, 2020). Punctuation adds structure and intention to a piece of text. Smith (1982) likens the 'transcribing' aspects of writing (pen to paper or finger to keyboard) to a 'tapestry', combining decisions on word choice and spelling with use of punctuation. He suggests (1982, p. 156) that punctuation 'reflects the structure of meaning in written language' in that it provides a visible spatial framework, marking out connected and embedded meanings in texts of different kinds.

According to Ravid and Tolchinsky, a primary function of punctuation is 'signalling nuances of semantic significance which might otherwise not be conveyed at all.' (2002, p. 438). Caracciolo (2014), citing the work of Nunberg (1990), suggests that punctuation needs to be considered alongside other graphical features of written text, as they serve the same kinds of purposes. According to Caracciolo, these written cues serve a similar function to non-verbal communicative cues that accompany spoken language (see also Ravid & Tolchinsky, 2002, p. 437). The views of Caracciolo's are echoed by Hall (2009), in relation to punctuation use in children's literature. He observes how, for example, some writers signal speech by typestyle (bold, underlining etc.), type size, and space, or by a combination of these features. Typography in picture books has become especially diverse with a range of different devices being employed. Graphic novels, such as those of Dav Pilkey, are similar to comics in that they include boxed pictures and text (known as lettering) (see, for example his *Captain Underpants* series). Written in comic style, using the author's hand lettering, Pilkey's stories contain copious examples of conventional punctuation being used in playful ways. These include the recurrent use of emboldened words, ellipses, block capitals, underlining, dashes, quotation marks and the hashtag. His books also contain frequent use of unconventional punctuation in the form of multiple consecutive marks (of question or exclamation marks). Many of these conventions are also found in serial comics. In the light of these published sources, the fact that punctuation has been relatively neglected in work on writing as design is even more notable.

Punctuation Choice and Individual Writing Style

Punctuation use can of course vary according to a writer's style. Nicholas Rougeux (2016), a Chicago-based designer and data artist, examined the *visual* rhythm of punctuation in well-known works of literature for his *Between the Words* poster series. His exploration of punctuation in literary classics reveals some interesting differences between texts. This entailed removing all the letters, numbers (with the exception of chapter numbers), spaces and line breaks from these works so that only the punctuation was left in one continuous line as they appear in those texts. Rougeux arranged the text in a spiral, with markings for each chapter and an illustration in the centre to create a visual representation resembling a vinyl record. Figure 1 shows the result of this process being applied to *The Wonderful Wizard of Oz*. Rougeux found differences between the contributions of different punctuation marks in those texts he examined – as did Adam Calhoun (2016) who also visualized some classic texts through only their punctuation. When considering children's literature, Rougeux remarks that, in *Alice's Adventures in Wonderland*, there are a large number of exclamation marks which reflect the expressions of surprise and strong reaction in the story.

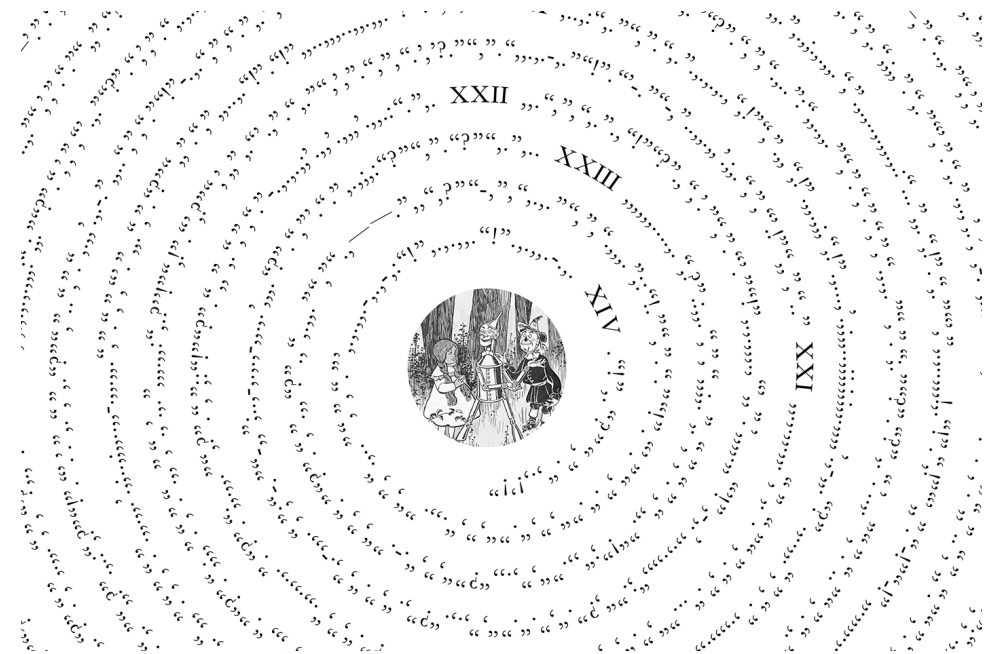


FIGURE 1.

The punctuation of *The Wonderful Wizard of Oz* (excerpt).
Artwork from 'Between The Words' (Rougeux 2016).

Punctuation in Advertisements

Punctuation use can also vary according to the type of text being written, and this is clearly evidenced in advertisements, where conventions of continuous prose are often circumvented or modified to increase reader interest and perhaps pursue commercial gain. Advertisements, part of a 'meta-genre of non-fiction' (Andrews et al., 2009, p. 292), may use a range of distinctive language features, such as vivid vocabulary, short, catchy phrases and conversational grammar to persuade, argue and advise (Crystal, 1995; Leech, 1966; Packard, 1981).

These features are incorporated into an advertisement's structure. From their experience in developing the standardised writing task whose use is reported in the present article, Twist and Brill (2000, p. 48) suggest that persuasive writing in children is often characterised by a three-part overall framework consisting of an introduction, main description and concluding appeal. According to genre theorists (e.g. Martin, 1989; Cope & Kalantzis, 1993), this may be extended to include an opening statement or 'headline', followed by such features as arguments and evidence and re-statements of a point of view. Jefkins (1992) suggests that advertisements have to fulfil five functions: (1) attract attention, (2) stimulate interest, (3) create desire, (4) inspire confidence and (5) provoke action. Both the three-part framework and Jefkins' suggestions are returned to later in this article.

Language Play in Advertisements

Language play is open to a range of interpretations but a definition that has enduring utility is ‘any use of language that is creative and unusual: that has purpose beyond the mere communication of basic information’ (Nilsen & Nilsen, 1978, p. 28). A recent critical review of the topic (Beard & Burrell, 2021) identified a wide range of occurrences in English, including rhymes, jingles, alliteration, repetition, riddles and puns. Such resources can be tools for the imaginative design of advertisements, as Cook (1994, 2000) has shown. The recent review by the present authors also illustrates how punctuation may be used in playful ways, although few publications to date have yet addressed this possibility and even fewer have considered the potential role of playful punctuation in work on writing as design.

As well as language play, advertisers seek to capture the reader’s attention by employing a range of typographical features. Such features include aspects of typeface – for example, different print sizes, fonts and styles – as well as punctuation. The following may be employed for emphasis or contrast: block capitals, bold, colour, italics or underlining. Sometimes several of these may be combined for impact. Variations in spelling, capitalization, hyphenation, italicization and paragraphing may also be employed in ways which playfully bend and break the rules. The successful slogan used by the British Milk Marketing Board and Dairy Council (‘Drink a pint a milka day’) made playful use of spelling, popularising the word ‘pinta’ (to refer to a pint of milk) in a similar way to ‘cuppa’ (as a word for a cup of tea). The ‘Beanz Meanz Heinz’ slogan used to promote Heinz Baked Beans also incorporates unconventional spelling. Schlotzsky’s, the American chain of restaurants specializing in sandwiches and pizza, has also made playful use of spelling in its slogans (for example, ‘Every Bite Lotz Better’).

Jenkins (1992 p. 269) notes how punctuation is a writing tool ‘which can be used to make copywriting a literary form different from any other.’ Advertisements may include short pithy sentences (‘Life tastes good.’ (Coca-Cola)), abbreviations (‘It’s Finger Lickin’ Good’ (KFC)) and may deliberately break the rules (‘The Best Burgers Yet!’ (Wendy’s)). Punctuation marks can be employed in other unconventional ways (e.g., ‘Itz a Red Thing’ (Tizer drink)) where an individual mark is used to denote a particular letter. However, playful punctuation in advertisements is most frequently used in conventional ways as illustrated by the majority of the examples in Table 1. Sometimes they even form part of the product’s name (e.g., ‘I Can’t Believe It’s Not Butter!’ (substitute for butter) and ‘Oh Henry!’ (Candy bar)).

TABLE 1. (OPPOSITE PAGE)

Professional advertisements incorporating playful punctuation.

Advertisement	Punctuation use
The Vegan ‘Jack ‘n’ Ch**se’ Pizza (Pizza Hut Restaurant menu)	Asterisks to indicate the omission of certain letters
@ BK You Got It! (Burger King)	Commercial @ sign to stand for ‘at’
A Little Bottle of Science (Not Magic) (Yakult probiotic drink)	Round brackets to slip in asides
HEINZ [SERIOUSLY] GOOD MAYONNAISE (Heinz mayonnaise)	Square brackets to identify added emphasis
EVERY day is a YAKULT day (Yakult probiotic drink)	Block capitals to express emphasis
Kids and grown-ups love it so – the happy world of Haribo. (Haribo candy)	Dash to connect or separate phrases or sentences
A cheeky chomp of chewy caramel, covered in delicious Cadbury milk chocolate – the tasty treat you can sink your teeth into! (Cadbury Chomp bar)	Dash to emphasize a point
“Have a break... Have a Kit Kat.” (Nestlé Kit Kat)	Ellipsis to indicate a pause in speech
It’s way better than fast food... It’s Wendy’s. (Wendy’s)	Ellipsis to indicate a pause
<i>A joy to give, a delight to receive...</i> (Lindt Master Chocolatier Collection)	Ellipsis to leave something to the reader’s imagination
He likes it! Hey Mikey! (Life Cereal)	Exclamation mark to express surprise
It’s the Real Thing! (Coca Cola, soft drink)	Exclamation mark to emphasize a statement
They’re Gr-r-reat! (Frosted Flakes Cereal)	Exclamation mark to exclaim or admire
New Waffelos Cereal... a nice part of a complete breakfast. Yaaa Hooo! (Waffelos cereal)	Exclamation mark to exclaim
PAYDAY IS ALMOST TOTALLY NUTS! (PayDay candy bar)	Exclamation mark to indicate a strong feeling of surprise, approval, etc
Snap! Crackle! Pop! (Rice Krispies cereal)	Exclamation mark to attract attention or for drama
Charlie says, “Love my Good and Plenty!” (Good and Plenty, candy)	Exclamation mark to give a command
Swedish Fish: The #1 Fish Shaped Candy in the World (Swedish Fish, candy)	Hashtag to stand for ‘number’
“Tyrrelbly, Tyrrelbly Tasty” (Tyrrells potato chips)	Italics for emphasis or contrast
Starburst isn’t life juicy? (Starburst, candy)	Question mark to indicate rhetorical questions
got milk? (California Milk Processor Board campaign)	Question mark to mark truncated questions
How many licks does it take to get to the tootsie roll center of a tootsie pop? (Tootsie Pop, lollipop)	Question mark to mark the end of a sentence which is a direct question
Did somebody say McDonald’s? (McDonald’s)	Question mark to show that something is uncertain
“The milk chocolate melts in your mouth- not in your hands.” (M&M’s, candy)	Quotation marks to indicate direct speech
THE TROUBLE IS THEY <u>ALL</u> TASTE TOO GOOD! (Kellogg’s Crunchy Nut cereal)	Underlining as a form of emphasis

Laffy Taffy candy wrappers feature jokes and puns, which have become a popular feature of the candy. They first appeared on the wrappers in the 1980s and began incorporating jokes sent in by children with a question and answer format that reinforces the use of the question mark (joke) and exclamation mark (punchline).

Children as Designers of Text?

In considerations of children as designers of text through their use of playful punctuation, it is notable that there have been relatively few studies of children's understanding and use of punctuation, despite its important role in writing. Hall (1999) examined the writing development of young children (between the ages of 5 and 7) over a two-year period. He found that children initially used 'graphic punctuation' whereby the children viewed punctuation as a visual feature (a mark on the page) rather than a linguistic feature (where a visual mark is used to mark meaning). A later study by Dávalos-Esparza (2017) examined the understanding of the uses and functions of punctuation by children aged between seven and 12 years of age. Findings from this study support those of Hall (1999) by suggesting an evolution in the children's conceptualization of punctuation that progresses from punctuating by using graphic criteria to punctuating using textual criteria. Analysis of the data led to the identification of certain evolutionary indicators of the development of punctuation. Initial indicators include: punctuation at the edges; graphic criteria focussing on order or visual highlight. In contrast, later indicators of development include: combining the use of basic punctuation with expressive forms (question marks and exclamation marks) in almost all areas of the text; choosing one mark – among several – to create an effect on the reader or to change a word's meaning. The findings from her study also suggest that primary school children employ clues from some categories of words which guide their decisions about the choice of punctuation marks to use that best reflects the semantic and / or discursive function in the text.

In designing texts, children need to draw on their knowledge of text types. Persuasive texts, particularly advertisements, are not commonly referenced genres within the school setting (Rose, 2009). This is surprising given that children frequently encounter this genre in non-school settings with the average American child watching an estimated 40,000 television commercials a year according to a widely disseminated report some years ago (APA Task Force, 2004). This figure that may well have increased substantially with the more recent availability of smart phones, I-pads and other electronic media. According to a more recent report (Rideout et al., 2010), the average American child (age eight or older) spends

more than seven hours a day with screen media – watching television, using the computer, playing video games, and using hand held devices – through which they are exposed to advertising. Four product categories (toys, cereals, candies, and fast-food restaurants) account for approximately 80% of all advertising to children (Encyclopedia.com, 2023).

Children's own attempts at designing advertisements are likely to draw upon these various modes, although their experiences of them outside of school may vary greatly in nature and extent. It is from these multimodal experiences that children may appropriate appealing content and form to bring to their own writing. Some sources suggest that such texts are likely to be created through redesign rather than through simple replication (Siegal, 2006; Geneshi & Dyson, 2009; Marsh, 2009). Adaptation is evident in children's playground rhymes which parody familiar songs and rhymes (Ackerley, 2002; Opie & Opie, 1959) including some from advertising. Moore and Lutz (2000) report on the ways in which engaging advertising can have a strong impact on children. The children they interviewed were able to recall advertisements, sing jingles, mimic characters and to relate information gleaned from the content. The children also recounted how they looked forward to seeing particular advertisements, indicating that they were not passive recipients of advertising but active and involved.

Work on writing as design has rarely included references to scholarly publications on punctuation. This has prompted the re-examination of an existing dataset of children's persuasive writing reported in the present article. The dataset came from an investigation of language play in children's writing. Such a re-examination can provide new insights into the study of writing as design and also the field of visible language as a whole.

Dataset

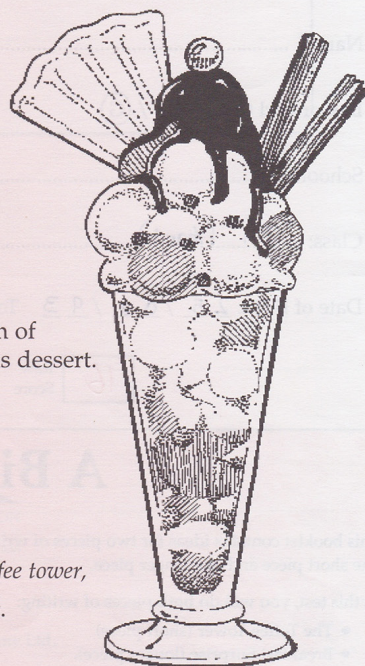
The research underpinning the present article involved the use of a standardised task to investigate the writing of an advertisement by primary (elementary) school children. The task was *Literacy Impact Test B* (Twist & Brill, 2000). It involves writing a description for a new dessert called the *Toffee Tower*. The context of the writing is a café menu, where the description will accompany a picture of the dessert. Children are told in the prompt (see *Figure 2*), read aloud by the teacher, that the purpose of the description is to (i) inform the reader about the contents of the dessert; and (ii) persuade the reader to try it. The task is described by the National Foundation for Educational Research (NFER) as a 'persuasive description.' The task was deemed to have ecological validity in that it enabled the children to draw upon their real-life experiences of reading and listening to advertisements. The task is complemented by an additional one, the writing of an imaginative narrative, details of which are reported elsewhere (Beard & Burrell, 2010).

This is the first, short piece of writing. Your teacher will read it through with you. You will then have 10 minutes to do your writing. Your teacher will tell you when to stop.

The Toffee Tower

The *toffee tower* is a new kind of ice cream dessert to be sold at Treats café.

This picture of the *toffee tower* will appear in the Treats café menu.



Now Treats café needs a tempting description of the *toffee tower*, to encourage people to try this dessert.

Your task is to write a short description of the *toffee tower*.

The purpose of the description is to:

- give information about what is in the *toffee tower*,
- encourage people to try this new dessert.

Think about:

- describing the interesting details of what is in the *toffee tower*
- how to make the *toffee tower* sound delicious enough for the customers to want to try it.

FIGURE 2.

Pupil prompt for *The Toffee Tower* writing task

The participants were 9–10 year-old pupils (60 boys; 52 girls) from two English Local Authorities in the UK representing a range of socio-economic catchments. At the time of the investigation, the five schools that were involved all followed the statutory national curriculum and the same non-statutory guidance (additional details are provided in Beard, Burrell & Homer, 2016).

Procedure

In line with the Guide for Literacy Impact Test B, the children were given 10 minutes to complete the task (the separate narrative writing task is allocated 30 minutes). As part of the administration of the test, the children are told that their 'writing should not include illustrations or elaborate lettering' (Twist & Brill, 2000, p. 4). The prompt makes no mention of the use of playful language or punctuation. The task was then administered a year later to the same children. On both occasions the tasks were administered by the children's respective class teachers and the extant ethical guidelines of the British Educational Research Association were followed. Children wrote their persuasive descriptions in handwritten form as this was part of the children's usual classroom practice. The analyses were undertaken on both pieces of writing.

Initial Analysis

The test guide provides a numeric scheme focused on five constituents of writing, applied to the persuasive and the narrative tasks (Twist & Brill, 2000, p. v). The scheme and its administration have been discussed in previous publications which reported on features of linguistic and text-level development in the two genres over the 12-month period (Beard & Burrell, 2010; Beard et al. 2016).

In addition to the findings from the sample as a whole, the numeric scheme was used to identify three attainment sub-groups whose writing could be analysed in detail and comparisons made. The sub-groups comprised (i) the highest-attaining children in the second administration of the task ($n = 13$); (ii) the children with the lowest scores on both occasions ($n = 12$); (iii) the children whose attainment increased most over the twelve-month period ($n = 13$, three of whom were also in the high attainment group). The writing of the sub-groups was further investigated to identify the features of language play that were apparent, including playful punctuation (Burrell & Beard, 2022 a and b; Burrell & Beard, 2023).

As children's punctuation use has not been extensively studied, the analysis included the children's use of a broad range of punctuation marks including unconventional use through combining marks. However, it omitted the use of basic punctuation (in the form of full stops and commas) and near-ubiquitous punctuation as these are not

granted the value of 'expressive' (Dávalos Esparza, 2016) and are likely to be included in studies examining more general aspects of writing development. Throughout this article, we collectively refer to such punctuation as 'playful punctuation.'

As brackets and (single and double) quotation marks only occur in pairs, each pairing was recorded as one occurrence, for example brackets – *chocolate (Dairy milk) flakes*; quotation marks – *scrumptious toffee balls*'. Children's use of capital letters (to express emphasis) was recorded as one occurrence where all the letters in a single word or consecutive words appeared in block capitals (i.e. *a TOFFEE TOWER*). When capitals were not used in this way, they were not included in the analysis (for example, *It's The Toffee Tower*). Where children used multiple exclamation marks together, each mark was recorded as an individual occurrence. One child used compound punctuation in the form of a dash after a colon (i.e. :-). In this instance the dash was not counted in the numerical analysis but was considered in the overall analysis. Punctuation used for decorative purposes was not included in the numerical analysis but is examined in the Discussion.

Subsequent Analysis

For the purposes of the investigation reported in the present article, an additional sub-group (n=14) was included, to provide examples of features that were not evident in the writing of the other sub-groups (i.e. bullet points and square brackets). This additional opportunity sampling optimised the search for indications of punctuation-based text design.

The two principal research questions were:

- What features of playful punctuation are evident in the children's persuasive writing?
- How is this punctuation used to fulfil the different design elements outlined by Sharples for example setting goals, making plans and satisfying constraints, through communicating with and through the text (semantic and linguistic choices) to achieve a human effect?

In answering the first research question, 'What features of playful punctuation are evident in children's persuasive writing?' all the anonymised scripts were re-read by the two authors of the present paper and all forms of playful punctuation were categorised and tabulated. Only punctuation that was used by the children themselves was included in the numerical analysis (with any missing punctuation being overlooked). This missing punctuation typically reflected a writer's limited knowledge

of how punctuation is used conventionally. In order to answer the second research question, concerning how this punctuation is used to fulfil different design elements, further use was made of the earlier categorisations and tabulations that were undertaken to address the first research question.

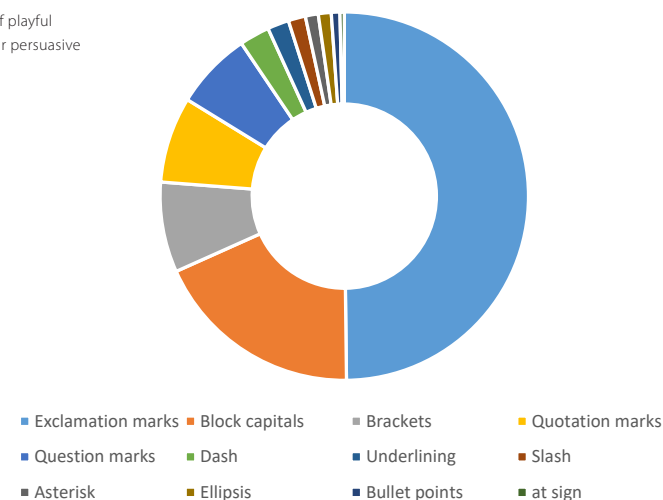
Results

What features of playful punctuation are evident in the children's persuasive writing?

In presenting the results for an article in the present journal, it is appropriate to use a suitable means of visual representation. Figure 3 presents data in the form of a doughnut chart. The doughnut chart is similar to the traditional pie chart but with a blank centre, allowing for additional information about the data as a whole to be included, for example, labels, the name of a selected category, or the chart title. Doughnut charts are also generally seen as similar to pie charts in effectively illustrating proportions, and as supporting multiple statistics at once; they are additionally seen as providing a better data intensity ratio than standard pie charts. The use of doughnut charts eliminates the need to compare the size or area of the 'slice' and shifts the focus on the length of the arc, which in turn is easy to measure (Harris, 1999).

FIGURE 3.

Children's choice of playful punctuation in their persuasive descriptions



As can be seen in Figure 3 the most-used punctuation mark was the exclamation mark accounting for almost half the punctuation. Block capitals, brackets and question marks were also frequently used by the children. In contrast, the commercial @ sign, bullet points, the asterisk, ellipsis, slash, underlining and the dash were used most infrequently.

How Is This Punctuation Used to Achieve the Different Design Elements?

The three-part overall framework (introduction, main description and concluding appeal) that often characterises advertisement writing (Twist & Brill, 2000) was regularly employed by the children. Within this organisational framework, a variety of playful punctuation was noted that was commensurate with text design. (All the children's names in the present article are pseudonyms and all original spelling and punctuation have been retained.)

Design Elements within the Three-part Framework

Besides punctuation marks, the children's use of punctuation is evident in the visual arrangement of text through the use of space and certain typographical devices. The three-part overall framework used by the children either took the form of a single paragraph or a more complex arrangement. Both Luke and Helen's persuasive descriptions consist of a single paragraph ending with a feature that is attention-drawing. Luke's engaging final appeal to the reader is further supported by a footnote at the bottom of the page signalled by an asterisk, whereas Helen ends her persuasive description with an element of consumer choice, centre-set on the page ('served with wafer (optional)') and arranged over two lines. Figure 4 shows some different arrangements of text where children have chosen to include three paragraphs. Each paragraph is signalled by the use of line spacing. This has the effect of creating clearly identified paragraphs for readers – each with a main theme and related points. For example, the middle paragraph is used by each writer to describe the contents of the Toffee Tower dessert. Carol includes a heading at the beginning of her paragraph in block capitals and is underlined for additional emphasis. Lottie includes a heading, centred and in block capitals to create impact.

Punctuation Uses as Design Elements

Michael's text design incorporates the three-part framework and is set out in Table 2 in order to illustrate his choice of punctuation for effect; it is consistent with the primary goal or purpose of the writing: to inform the reader about the contents of the dessert and persuade the reader to try it.

Carol's text

Get your TOFFEE TOWER at the TREATS CAFÉ. You will find a picture of it in the TREATS CAFÉ MENU.

WHATS IN THE TOFFEE TOWER

In the toffee tower desert there is vanilla, strawberry and chocolate flavoured ice-cream, two chocolate flakes, melted toffee poured on to it, with a cheery on top and last of all a biscuit.

This toffee tower once you have eaten it you will want more. If you feel hungry go to the TREATS CAFÉ.

Lottie's text

THE TOFFEE TOWER

The Toffee Tower is sold at Treat's Café. The price of this delicious desert is £1.50!

On the bottom of the Toffee Tower is the delicious a strawberry. On top of that is a tasty helping of vanilla ice-cream. Thirdly there is a few of Treats café special marshmallows, coming out of the top is a pile of tasty chocolate chips with treacle on the top. To finish it off two flake sticks, a wafer and a bright red juicy cherry on the top.

But remember this tasty treat is only sold at TREAT'S CAFÉ!!

Tony's text

This new ice-cream, Toffee Tower, is absolutely delicious. Its full of sprinkles and chocolate drops. Infact its got every thing to tickle your taste-buds. You can chosse any two types of ice cream, vanilla, chocolate, strawberry. You name it whatever two flavours of ice cream you want. you can have.

At the top of the ice-cream there is oozing melted toffe (that tastes delicious with vinilla ice-cream, just a tip). Then there is two toffe flavoured delectable flakes rested in the ice-cream just waiting for you to dip into the creamy ice-cream, also, a waffer is on the * top (unfortunatly not toffe flavour).

So what do you think? Is it worth trying for just three pound! or not? After all its your choice, at the end of the day.

FIGURE 4.

Children's arrangement of text

Michael's writing illustrates how, through thoughtful design, punctuation can be used to confirm and embellish the text's persuasive structure and elements (e.g. audience, hook, key information). Advertisement form is maintained throughout, demonstrating accurate attention to task purpose and recognition of the constraints it imposes on the writer. Paragraphing is used to mark the main divisions of Michael's description and this is indicated through the use of new lines and also line spaces that draw attention to different parts of the text. His description is abundantly detailed and its sequence is confidently managed to engage the reader's interest. For example, the opening sentence establishes the writing's persuasive purpose through the inclusion of a 'hook' to capture the interest of the reader. Quotation marks are used to draw attention to particular words and to clarify his hyperbolic sentence: 'This highly rated mouth-watering toffee tower is the most gorgeous Ice-Cream on Earth, 'well nearly!'' In the main description, Michael includes specific information that readers will want to know about the contents of the new dessert. He chooses to use quotation marks again, but on the second occasion their function is to highlight a particular ingredient: 'Strawberry Sauce'. Dashes set off an interruption in a sentence to highlight another ingredient and to indicate an expansion: 'We have two flakes, – chocolate – and a crispy wafer shaped like a sea-shell.' Reference is made to his chosen target audience for the Toffee Tower (i.e. parents and their children) and also an additional 'hook' in the form of an offer ('Free with all of this'). Besides factual information, Michael also includes humour. Round brackets are used to clarify descriptive details ('your choice') and to slip in a humorous aside ('Please Eat Me') with the latter also containing quotation marks to indicate direct speech. His design demonstrates sustained awareness of the reader. For example, in the main

TABLE 2.

Playful punctuation choice in
Michael's Toffee Tower description

Persuasive Structure and Script Content	Punctuation used
<p>Introduction – Attracting attention</p> <p><i>This highly rated mouth-watering toffee tower is the most georgeous Ice-Cream on Earth, 'well nearly'.</i></p>	<p>Quotation marks to draw attention to particular words and clarify</p>
<p>Main description – The information</p> <p><i>Filled, in the jar, is soothing toffee and vanilla Ice-Cream mixed together. As we move nearer the top, we approach a delicious topping of 'Strawberry Sauce'. We have two flakes, – chocolate – and a crispy wafer shaped like a sea-shell.</i></p> <p><i>Free with all of this is a cherry, apple or lemond bubble gum (your choice) and it is placed on top of this outstanding piece, however if your child is young we have a chewy jelly baby that they could have.</i></p> <p><i>This Ice-Cream should be tasted by you as it wants to be eaten ('Please Eat Me')</i></p> <p><i>We have delicious deserts, but this is our all time best as it tastes, smells and looks the best.</i></p>	<p>Quotation marks to highlight a particular ingredient</p> <p>Dashes to set off an interruption in a sentence, to highlight an ingredient and to indicate an expansion</p> <p>Round brackets to clarify descriptive details</p> <p>Quotation marks to enclose direct speech</p> <p>Round brackets to slip in asides</p> <p>Paragraph (Line space) to draw attention.</p>
<p>Concluding appeal – The slogan</p> <p><i>So why not try the new, amazing toffee tower? It soothes and waters your throat releasing any soreness around it!</i></p> <p><i>Go on give it a go!</i></p>	<p>Question mark to directly appeal to the reader</p> <p>Exclamation mark to emphasize a statement</p> <p>Paragraph (Line space) to draw attention</p> <p>Exclamation mark to appeal to the reader to try it</p>

description the text directly addresses the reader through the inclusion of brackets ('*your choice*') while later in the final concluding appeal it directly appeals to the reader using a question ('*So why not try the new, amazing toffee tower?*'). An exclamation mark is used to emphasize the dessert's appeal and health benefits for the reader ('*It soothes and waters your throat releasing any soreness around it!*'). The design ends with a call for action – a final appeal in the form of an alliterative slogan ending in an exclamation mark: '*Go on give it a go!*'

The following sections, corresponding to the three-part overall framework, consider the use of persuasive elements used by other children within their Toffee Tower descriptions.

Design Elements within the Introduction

For his introduction, Luke wrote:

— *Try the knew 'Toffee Tower' the knew tasty desert that will get your tastebuds tingling.*

This short attention-getting introduction refers directly to the new dessert by name and also incorporates alliteration to engage the reader. Luke's use of quotation marks around the words 'Toffee Tower' draw attention to the name of the dessert giving the enclosed words special status. Highlighting them in this way helps also to embed the product's name into the reader's memory which is particularly important for a new product. His single sentence introduction is a direct appeal to the reader to try it. In contrast, Lata's more extended introduction consisted of:

— *Do you crave for large toffee filled deserts? Does it make your mouth water for large ice-creams filled with all your favourite things? If the answer is yes, you must try the brand new Toffee Tower, exclusively at Treat's Café.*

Her introduction also directly appeals to the reader, but this time through a series of questions with a consistent focus on persuasion through a recognition of human instincts and drives. Lata's introduction also refers directly to the dessert's name with additional reference to the name of the café where the new dessert is to be sold. Both writers incorporate persuasive elements (audience, branding, a hook) into their introductions to attract the attention of readers, with punctuation helping to confirm and embellish the persuasive nature of the text. Table 3 provides some additional examples taken from the introductions of other children's designs for the Toffee Tower description.

Design Elements within the Main Description

For her main description, Rhona wrote:

— *There are 3 different sizes of toffee tower which are:- Small = 50p, Medium = 75p, Large = £1.00. However, if you can't eat it all, don't*

TABLE 3.

Design elements included in the introduction

Persuasive element	Excerpt of writing	Punctuation used and effect when combined with words
Headline / Heading	<i>TOFFEE TOWER</i> (Jack)	Block capitals [centred] to create impact
	<i>THE TOFFEE TOWER!</i> (Lottie)	Block capitals [centred] to create impact Exclamation mark to emphasize
Brand name	<i>The new dessert is in town. The toffee Tower!</i> (Sophia)	Exclamation mark to emphasize
	<i>Why not try our new delicious dessert called 'Toffee Tower'!</i> (Natalie)	Quotation marks to draw attention to the name of the dessert giving the enclosed words special status
	<i>The Toffee Tower is a absolutely huge ice cream treat, with several ice cream flavours such as Chocolate, Vannilla, Strawberry, bubblegum and many many more!</i> (Blake)	Exclamation mark to emphasize a statement
Audience	<i>The toffee tower is so tastey you will never want to stop!</i> (Blake)	Exclamation mark to emphasize
	<i>The Toffee Tower is the best ice cream you could possibly think of!</i> (Mary)	Exclamation mark to indicate a strong feeling of approval
Hook	<i>you'll NEVER belive the treat we've got up our sleeve's.</i> (Abigail)	Block capitals to express emphasis
	<i>there is no better ice cream around!</i> (Julia)	Exclamation mark to indicate a strong feeling of approval
Call to action	<i>Come to Treats café!</i> (Sophia)	Exclamation mark to emphasize an instruction
	<i>Come to Treats café and and buy yourself a Toffee Tower at a low price of £2.00!</i> (Mary)	Exclamation mark to emphasize an instruction

worry! Our staff will provide you with a small tub for the rest of the ice-cream if you wish. For every kid's sandwich you buy, one ice-cream will become 50% cheaper (if it's a medium ice-cream, it becomes 37p). You must hurry, though! The delicious Toffee Tower is only sold in the Spring and Summer, and we have a limited amount we can make. However, the more people buy, the more we'll be able to make!

Unusually, Rhona chooses to use compound punctuation (in the form of a dash after a colon) to list the sizes of Toffee Tower available to customers. This use could be interpreted as an attempt at being creatively inventive, perhaps even referencing an emoticon or a glyph like the interrobang (a combination of a question and exclamation marks). Parentheses are used to clarify the cost of the medium size when purchased with a child's sandwich creating a more informal and relaxed style. Rhona maintains a consistent persuasive appeal. Underlining is used to emphasize a certain word in a sentence – with the same sentence ending in an exclamation mark for added drama. Both forms of punctuation convey the need for readers to act promptly in order to avoid disappointment. Her main description ends with an exclamation mark which expresses enthusiasm to meet consumer demand for the product. Rhona's description incorporates a number of persuasive elements to tempt her readers to try it (audience, brand name, call to action, key information, the offer).

In contrast, Bryony's main description consists of a detailed description of the dessert's key ingredients:

This breath-taking delicious ice-cream, is way better than any knicker bocker glory. It has, two Cadbury flakes in, all types of different sauces (where you can choose which ones you want), different flavoured ice cream scoops-like all the colours from the rainbow, little crunchy crispy blobs and one nice big golden toffee, mouth watering ball on the top; which when you lick it / put it in your mouth, it starts dissolving.

When you indulge yourself with this ice-cream, then you'll feel like king of the world. For as soon as you have one taste of it, you want more, more and more! (Do you feel like eating this yet?). Nevertheless, save the best till last – at the bottom, there is warm-chocolate bananas – or any other fruit you'd like. However, if you want, we can add some extra things, in like; sweets or hot chocolate bars.

Bryony's use of descriptive advertisement-style language is maintained beyond her opening sentence through the use of hyperbole by comparison to a competitor. Round brackets are used to inform readers that they are able to choose which sauce they have on their dessert. A slash is used to separate alternatives and an exclamation mark is

used at the end of a hyperbolic sentence to emphasize the indulgent nature of this new dessert. Round brackets are used again, but on this occasion they are used to include an aside by directly appealing to readers through the use of a question. A pair of dashes create an expansion to inform readers of the dessert's best part. There is a consistent focus on persuasion which is achieved through the use of strong imagery, a conversational relationship with the audience, key information about the product and related offers (choice of sauces, optional additions). Rhona and Bryony both incorporate persuasive elements (audience, key information, imagery, etc.) into their main descriptions in an attempt to convince readers to buy the dessert, with punctuation helping to confirm and embellish the persuasive nature of the text. Table 4 provides some additional examples taken from the main descriptions of other children's designs for the Toffee Tower description.

Design Elements within the Concluding Appeal

For her concluding appeal, Carol wrote:

— *So grab some mouny and get down here now!*

— *THE TOFFEE TOWER
IT'S THE GREATEST!*

Carol's concluding appeal aims to call to action readers and her use of an exclamation mark emphasizes the need to act promptly. As indicated above, part of her concluding appeal was centre-set on the page. Written in block capitals letters – the hyperbolic sentence included an exclamation mark for drama. Luke's final and engaging appeal to the reader was supported by some small print and the use of an asterisk and an exclamation mark:

— *try this knew 'Toffe Tower'* before they all sell out and they have none left!*

to slip in an aside from the author:

— ** I/me off to get one.*
[written as a footnote, near the bottom of the page].

Both writers incorporate persuasive elements (audience, branding, call to action) into their concluding appeals to create a memorable ('take home') message, with punctuation helping to confirm and embellish the persuasive nature of the text. Table 5 provides some additional examples from the concluding appeals of other children's designs for the Toffee Tower description.

TABLE 4.

Design elements included in the main description

Persuasive element	Excerpt of writing	Punctuation used and effect when combined with words
Hook	<i>Whats in the toffee tower your asking?</i> (Carol)	Question mark to engage readers and pave the way for information about the dessert's ingredients
	<i>Now for what the toffee tower contains!</i> (Kayla)	Exclamation mark to attract attention or for drama
Audience	<i>why should you resist?</i> (Julia)	Question mark to directly appeal to readers
	<i>will definately be the most delightful thing you have ever tasted!</i> (Helen)	Exclamation mark to emphasize hyperbolic phrase
Brand name	<i>We've kicked the knicker-bocker-glory's off the menu with this tounge tempting, terrific toffee tower treat!</i> (Elizabeth C)	Exclamation mark to emphasize a statement
	<i>only sold @ treats café</i> (Max)	Commercial @ sign to emphasize the dessert's exclusivity and availability
Key information	<i>10 – 10 people loved it</i> (Noah)	Dash to highlight customer satisfaction
	<i>At the top of the ice-cream there is oozing melted toffe (that tastes delicious with vinilla ice-cream, just a tip).</i> (Tony)	Brackets to add information and illustrate via an example
	<i>& <u>two</u> scrumpcios, fudge-centred chocolate covered flakes</i> (Helen)	Underlining to emphasize descriptive detail
	<i>[Danger nut product may cotain traces of soya milk seeds and/or/ defently nuts.]</i> (Tommy)	Square brackets to identify added emphasis for food allergy information with slashes used inside to indicate alternatives
Imagery	<i>Secondly, there are the most biggest Bubble Exploders that will make your tounge Fizzle and Pop, also they have the most delicious taste!</i> (Rose)	Exclamation mark to indicate a strong feeling of approval
	<i>Try this new dessert! Warning, VERY MOREISH.</i> (Lee)	Exclamation mark to emphasize an instruction
	<i>The smooth, soothing ice-cream along with sticky toffee sauce is a real dream!</i> (Ruby C)	Block capitals to highlight a cautionary note
The offer	<i>As soon as you have a bite of a chocolate flake it takes you into a chocolatey dimension!</i> (Bryony)	Exclamation mark to indicate a strong feeling of approval
	<i>your choice of ice cream (chocolate, bannana or vanilla)</i> (Luke)	Exclamation mark to emphasize a claim
	<i>To celebrate our new terrific toffee tower, Treats cafe has lowered it to half price!</i> (Elizabeth C)	Brackets to provide extra detail
		Exclamation mark to admire

TABLE 5.

Design elements included in the concluding appeal

Persuasive element	Excerpt of writing	Punctuation used and effect when combined with words
Audience	<i>you'll love it!</i> (Jack)	Exclamation mark to exclaim
	<i>So why don't you treat yourself with that wonderful desert!</i> (Jessica)	Exclamation mark to emphasize a statement
Brand name	<i>But remember this tasty treat is only sold at TREAT'S CAFÉ!!</i> (Lottie)	Block capitals to highlight the dessert's exclusivity Exclamation mark to emphasize a statement
	<i>buy the Toffee Tower! (Only at Treats café).</i> (Rhona)	Exclamation mark to emphasize an instruction Brackets to add information about the dessert's exclusivity and availability
	<i>Remember, only in treats cafe!</i> (Elizabeth C)	Exclamation mark to emphasize a statement
Call to action	<i>so get them while you can!</i> (Samuel)	Exclamation mark to add drama and emphasize the need to act promptly
	<i>by it now before its gone!!!!</i> (Ben)	Exclamation marks for additional drama and to emphasize the need to act promptly
	<i>Get yours NOW!</i> (Mary)	Block capitals to emphasize a command Exclamation mark to emphasize the need to act promptly
Slogan	<i>So go on, try the toffee tower, (if your tastbuds can handle it!)</i> (Ruby C)	Brackets to slip in an aside to challenge the reader Exclamation mark for emphasis
	<i>Get them before their gone! NOW!</i> (Susan)	Exclamation mark to emphasize a command Block capitals and exclamation mark for emphasis
	<i>If you'd like this, then buy it from Treats café – treat yourself!</i> (Bryony)	Dash allows for humour (in the form of a pun) to create a memorable ending Exclamation mark for emphasis
	<i>So come down to Treats café we will make your life SUPER DELICIOUS</i> (Octavia)	Block capitals for emphasis (further reinforced by the visual arrangement of text)

Discussion

It is important to note that this was an exploratory study that had some limitations, including the relatively small sample. The arbitrary and limited nature of the task, and the lack of choice in the task the children were asked to complete might also be considered limitations. However, Sharples (1999) argues that such a set of constraints should not be considered restrictions on writing. Instead, he suggests they should be viewed as a means of focusing the writer's attention. Nevertheless, it is highly likely that an alternative task (or even the one reported above) would have resulted in an even more playful use of punctuation if it were to be completed under normal classroom conditions. As indicated above, the task was a standardised test designed to assess children's writing attainment. However, the task could also be given with some means of print production to conjoin literary and graphic which would emphasize the graphic formatting of type (for example, typeface choices, line measure, leading, font size, letter- and word-spacing, justification, margins and relationships to pages, negative space, images and other graphic elements).

Poyner (2003, p. 128) argues that 'In the most fully realized and persuasive examples of postmodern graphic authorship, the designer has full control over the text, as commissioner, editor or writer.' However, the children in this study were not afforded such control as the task was prescribed rather than self-initiated and there were additional constraints (for example, time, the use of lined paper, length of lines, etc.).

In designing their texts, children had to be mindful of the goal (or purpose) of the writing. This was predetermined by the task itself that states that the description needs to both inform the reader about the contents of the new dessert and persuade the reader to try it. Other constraints inherent in the task included the form and audience for the writing with both the dessert's name and the café where it will be on sale being prescribed in the rubric of the assessment. The children were given a relatively short amount of time in which to complete their writing.

In relation to the first research question, 'What features of playful punctuation are evident in children's persuasive writing?', the children drew on their knowledge of punctuation and chose to employ a range of punctuation to attend to the task. Their advertisements for the new dessert included those punctuation marks frequently found in professional advertisements (e.g. exclamation and question marks) and also those less frequently used (e.g. asterisk and @ sign). The exclamation mark was used most frequently. Block capitals, brackets and question marks were also frequently used by the children. In contrast, the commercial @ sign, bullet points, the asterisk, ellipsis, slash, underlining and the dash were used most infrequently. The children's choice not to make more use of the ellipsis is interesting given Todd's (1995, p. 71) claim that it is often used in advertising

to leave something to the reader's imagination.

In relation to the second research question, 'How is this punctuation used to fulfil the different design elements outlined by Sharples for example setting goals, making plans and satisfying constraints, through communicating with and through the text (semantic and linguistic choices) to achieve a human effect?', the children's punctuation choices reflected an awareness of the effect they needed to achieve on the reader. Persuasive elements were included in each of the three parts (introduction, main description and concluding appeal) although some elements typically only appeared in one part.

Headings were typically centred. Block capitals being used to create impact ('TOFFEE TOWER' (Jack)) with the exclamation mark being used for additional emphasis ('TOFFEE TOWER!!!!!!' (Susan)). Within the opening, quotation marks around the dessert's name helped draw attention to the name of the new dessert (*Why not try our new delicious dessert called 'Toffee Tower'* (Natalie)). Punctuation was used for strong persuasive effect right from the start in Lata's extended opening that directly appeals to the audience ('*Do you crave for large toffee filled desserts? Does it make your mouth water for large ice-creams filled with all your favourite things?*'). Her decision to use questions helps to engage the reader from the beginning as well as create desire for the product. The importance of drawing the reader in is illustrated in Abigail's hook where block capitals were used to express emphasis ('*you'll NEVER believe the treat we've got up our sleeve's.*'). Some introductions also featured a call to action in the form of an invitation: '*Come to Treats café!*' (Sophia).

Punctuation was also chosen for persuasive effect in the children's main descriptions. For example, Carol's use of a question stimulates interest in the new dessert in the form of a hook and engages the reader by paving the way for information about the dessert's ingredients: '*Whats in the toffee tower your asking?*' Bryony's use of a parenthetical question appeals directly to the audience: '*(Do you feel like eating this yet?)*'. Her choice to use both round brackets (to slip in an aside) and a question mark (to provoke thought in the reader) helps to create desire for the product. The main description typically featured key information about the dessert's features. This is illustrated by Helen who used underlining to emphasize descriptive detail: '*& two scrumpcious, fudge-centred chocolate covered flakes*'. Strong imagery also featured in this section as illustrated by Ruby C who used an exclamation mark to indicate a strong feeling of approval: '*The smooth, soothing ice-cream along with sticky toffee sauce is a real dream!*'. Some of the children's persuasive descriptions made readers an offer, usually a benefit to potential customers. This is exemplified by Elizabeth C who included an exclamation mark to admire: '*To celebrate our new terrific toffee tower, Treats cafe has lowered it to half price!*'

The children's concluding appeals incorporated punctuation that was chosen for persuasive effect. Carol's final concluding appeal was centre-set on the page (and arranged over two lines). Written in capital letters, her hyperbolic sentence incorporated the dessert's name (on the first line) and included an exclamation mark for drama: '*THE TOFFEE TOWER IT'S THE GREATEST!*' Her choice to combine these helps attract attention. Block capitals were used by Lottie to highlight the dessert's exclusivity with multiple exclamation marks used for emphasis: '*But remember this tasty treat is only sold a TREAT'S CAFÉ!!*' Typically, the children's concluding appeals included a strong call for action as exemplified by Ben ('*by it now before its gone!!!!*') and Mary ('*Get yours NOW!*') with the exclamation mark being used to emphasize the need to act promptly. Slogans sometimes formed part of the call for action with explicit reference being made to the café's name. Bryony, for example, created a memorable ending through the use of a pun offset by a dash and ending in an exclamation mark for emphasis: '*If you'd like this, then buy it from Treats café – treat yourself!*' In contrast, Octavia used block capitals for emphasis which were further reinforced by the visual arrangement of the text: '*So come down to Treats café we will make your life SUPER DELICIOUS*'.

As indicated in the Results section, the children used punctuation to confirm and embellish various persuasive elements (e.g. audience, hook, key information). This helped the young writers to fulfil five important functions that according to Jefkins (1992) successful advertisements have to meet (see Table 6).

As designers of text, the children seemed to sense that conventional uses of language might be sometimes modified to create a certain effect. This was evident in the children's use of multiple exclamation marks (to add even more emphasis). As noted above, Susan used them in her heading after the dessert's name. This, combined with the use of block capitals, helps to fulfil an important function ('Attract attention') that, according to Jefkins (1992), successful advertisements have to fulfil. Multiple exclamation marks were evident in the children's concluding appeals. Julia used them to emphasize the new dessert's exclusivity ('*a PG rated ice cream!!*') where they helped her fulfil another important function ('Stimulate interest'; Jefkins, 1992). Lottie also used them to emphasize the new dessert's exclusivity (see Table 5) which helped her fulfil a different function ('Create desire') that advertisements have to fulfil (Jefkins, 1992). In contrast, Rose's use of multiple exclamation marks to express strong approval ('*Go on, give it a try. you'll never regret it! I promise!!!!*') help fulfil yet another function ('Inspire confidence') cited by Jefkins (1992). Finally, multiple exclamation marks were used by Ben (see above) and Sophia ('*so come down AND GET IT!!!!*') for additional drama and to emphasize the need to act promptly – helping them to fulfil another important function ('Provoke action') of Jefkins' (1992).

TABLE 6.

Some examples of using punctuation and persuasive elements being used to fulfill Jenkins' (1992) functions

Persuasive element	Excerpt of writing	Punctuation used and effect when combined with words	Function
Headline / Heading	<i>THE TOFFEE TOWER!</i> (Lottie)	Block capitals [centred] to create impact Exclamation mark to emphasize	Attract attention
Hook	<i>you'll NEVER believe the treat we've got up our sleeve's.</i> (Abigail)	Block capitals to express emphasis	Stimulate interest
Audience	<i>Do you crave for large toffee filled deserts?</i> (Lata)	Question mark directly addresses the reader	Create desire
Key information	<i>10 – 10 people loved it</i> (Noah)	Dash to highlight customer satisfaction	Inspire confidence
Call to action	<i>Get yours NOW!</i> (Mary)	Block capitals to emphasize a command Exclamation mark to emphasize the need to act promptly	Provoke action

However, the breaking of 'rules' is a feature of design. Bringhurst, in *The elements of typographic style* (2004, p. 10), tells his readers 'By all means break the rules, and break them beautifully, deliberately and well. That is one of the ends for which they exist.' Rule breaking is indicated in the subtitle of Samara's (2020) bestselling graphic design book, *Design Elements: Understanding the rules and knowing when to break them - A Visual Communication Manual*. As noted earlier, commercial advertisements may deliberately break the rules or employ punctuation in other unconventional ways. Literary writing in particular has sometimes seen punctuation being playfully omitted. For example, the final chapter of *Ulysses* has no punctuation between two full stops. The poet e. e. cummings used capital letters inconsistently and often largely ignored conventional punctuation.

While exclamation marks featured frequently in the children's writing, some punctuation marks were only used on a few occasions. Despite this, they still assisted in fulfilling the writers' purpose:

The commercial @ sign was used by Max (see *Table 4*) to 'create desire' by emphasizing the new dessert's exclusivity and availability.

Bullet points were used by Ruby P and Lottie to 'stimulate interest' by listing dessert's contents.

Luke used the asterisk in his concluding appeal (see Results above) to 'provoke action' by slipping in aside which was written as a footnote, near the bottom of the page.

Kayla used an ellipsis to 'inspire confidence' by introducing each of the direct quotes of satisfied customers.

*'Many people have gave us there opinion. Robyn age 11 says...
Once I had finished my toffee tower I just wanted more!'*

*Beth age 11 says...
'My favourite bit was the toffee chunks.'*

Tommy used slashes to 'inspire confidence' by indicating alternatives when providing food allergy information.

Rhona used underlining in her main description (see Results) to 'provoke action' by emphasizing a certain word.

Michael used dashes (see *Table 2*) to 'create desire' by setting off an interruption in a sentence, to highlight an ingredient and to indicate an expansion.

In addition to these, Tommy also incorporated a trade mark symbol which – although not a punctuation mark – creates the effect of an authentic advertisement.

With few exceptions, the vast majority of children complied with the test's rubric that their 'writing should not include illustrations or elaborate lettering' (Twist & Brill, 2000, p. 4). However, Susan was an exception. She used eight medium spaced asterisks (not included in the numerical analysis) as decorative elements that were arranged as part of the heading (in a way similar to typographic ornaments). One of these asterisks was positioned in an elevated form in the heading between the words 'TOFFEE TOWER'. These, together with the use of block capitals and six heavy exclamation marks were used to create impact. The heavy exclamation mark (similar to the conventional exclamation mark) 'is often used to denote strong emotions or to emphasize something important in a text' and is 'often seen in more decorative or ornamental contexts' (HTML Symbols, 2024). A further two uses of this stylized version of a standard exclamation mark were

used by her. On both occasions they came immediately after the name of the new dessert ('So come on in and ask for a **TOFFEE TOWER!** and get dug in to your new **TOFFEE TOWER!**'). Susan's final concluding appeal ('**TRY It you know that you want to.**') was ringed (and so placed outside of the standard syntactical framework of lines and columns) for added emphasis.

Besides punctuation, paralinguistic qualities are also enabled through typography. As the article concerns writing, the graphic manifestation of language, a broader analysis could describe how typeface choice and text formatting – even if handwritten – impact both comprehension and personality. However, the children's persuasive descriptions were completed as a standardised assessment designed to assess their writing attainment. For this task, children are only given 10 minutes to complete it so it is likely that presentational aspects were not uppermost in their minds. Furthermore, the rubric states that the 'café needs a tempting description of the toffee tower' which will appear in their menu with the picture provided (see *Figure 2*) presumably in printed rather than handwritten form. In such instances, as Crystal notes 'When preparing material that will be printed, whether on paper or screen, writers leave most of the design decisions to the publisher and typesetter.' (2016, p. 130). This is especially true in terms of the graphic formatting of type (for example, typeface choices, line measure, leading, font size, letter- and word-spacing, justification, margins and relationships to pages, negative space, images and other graphic elements). An image of the Toffee Tower was supplied and as previously mentioned, children are told as part of the administration of the test, that their 'writing should not include illustrations or elaborate lettering' (Twist & Brill, 2000, p. 4). Furthermore, children are given a writing booklet that includes a page of lines on which to write their description thus adding certain constraints in terms of design decisions.

Conclusion

Through their writing, the children demonstrated an ability to draw on their knowledge of the topic. They used this knowledge to construct their own texts through redesign rather than through simple reduplication (Siegal, 2006; Geneshi & Dyson, 2009; Marsh, 2009). Sharples (1999, p. 59) notes how 'We continually reshape the ideas and words of others for our own needs.' Sometimes this borrowing is more obvious than others. For example, Nathaniel incorporated the words of a popular song into his advertisement ('*you scream! I scream! we all scream for ice-cream!!!*') – but with the addition of unconventional punctuation in the form of multiple exclamation marks to express strong feeling and in doing so creating an effect on the reader. Interestingly, the same words have also been used in a commercial advertisement for chocolate syrup (by Hershey's which can be viewed on Youtube

(Tanner, 2010).

In designing text, considerable cognitive demands are made on young writers. Cognitive studies of the writing process have shown it to be a complex and demanding activity where the writer has to satisfy a variety of constraints. Structural models have sought to capture this complexity. Perhaps the most influential of these is the model proposed by Hayes and Flower (1980), in which they identified three component processes – planning, translating (formulation) and review. Alamargot and Fayol (2009) critique this model for neglecting the formulation component and its constituent processes. In an adapted version of the Hayes and Flower (1980) model, Berninger and Swanson (1994) included text generation and transcription within the formulation component with the latter including punctuation. In the past, punctuation has been relegated to a relatively subservient 'secretarial' role (Graves, 1983) where – along with spelling – it is considered part of the mechanics of writing (e.g. Glynn et al., 1982).

More recently, Fayol (1997) has argued that punctuation is an integral part of transforming thought into the linear dimension that writing requires. Wagner et al. (2011) suggest that as such, punctuation may be more related not only to thought but also to simple grammar. Findings from Dávalos Esparza (2016) suggest that primary (elementary) school children employ clues from some categories of words which guide their decisions about the choice of punctuation marks to use that best reflects the semantic and / or discursive function in the text. She also found that in terms of children's punctuation development, there were later indicators where children combined the use of basic punctuation with expressive forms (question marks and exclamation marks) in almost all areas of the text, as well as choosing one mark – among several – to create an effect on the reader or to change a word's meaning.

Findings from the present study are testament to children's ingenuity in using punctuation in creative and imaginative ways to design text. The findings indicate that 9–11 year-old children find persuasive writing offers a range of opportunities for creative and playful uses of punctuation, even though the young writers were not prompted to consider using this. The intuitive recognition of these opportunities led to children demonstrating how they could make numerous stylistic choices that enhanced their imaginative writing, helping them to support the writer's intention in a similar way that paralinguistic cues do in speech using tone of voice, hesitation noises and body language to convey a message. More nuanced meanings and emotions were conveyed using a broad range of punctuation. The study reported in the present article illustrates how playful punctuation can contribute to the design of a text and how young writers can use it to contribute to the meaning, purpose and appropriateness of the text for its intended audience.

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From Icons to Identities: Analysing Visual Cultural Elements in Emerging Scripts



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Abstract

The study explores the integration of visual cultural elements in emerging scripts and the motivations driving their development. By examining ten scripts from across the globe, the research identifies four main types of visual cultural elements: common cultural icons and images, influences from traditional art forms, elements from Indigenous knowledge systems, and traditional body art forms. The exploration suggests that integrating these elements may enhance script acceptance within communities, fostering a stronger connection with users. Additionally, the study explores five primary motivations for script development: resistance towards dominant groups, unification of marginalised groups, expression of cultural identity, language preservation, and recuperation of literacy. While visual cultural elements may impact script acceptance, the motivations behind script development also provide insights into historical and contemporary trends in global script innovation. The study suggests that incorporating visual cultural elements in script design could play a significant role in promoting cultural continuity and supporting language preservation.

Keywords

Writing systems
Emerging scripts
Indigenous languages
Cultural identity



1 Introduction

This paper is an exploratory study investigating the incorporation of various visual cultural elements within emerging scripts and the underlying motivations behind their development¹. After describing ten recent scripts, I argue that integrating visual cultural elements in the design of a new script can enhance its acceptance within the community. Users may be likelier to establish a stronger connection with a script containing familiar cultural elements. Conversely, the analysis suggests that the motivations driving script design do not influence their acceptance. Identifying and examining these motivations remains crucial, as they afford insights into contemporary and historical trends in global script development. Furthermore, such examination aids other communities in deliberating the rationale behind their script development initiatives.

Through discussions with colleagues at The Script Encoding Initiative at UC Berkeley, a research unit that helps Indigenous scripts get accepted to Unicode, and the Endangered Alphabets Project, a non-profit that researches and preserves Indigenous scripts, I identified a list of scripts that employed visual cultural elements in their design. These scripts are: Wancho (Wancho, India), Chisoi (Kurmali, India), Mwangwego (Bantu languages, Malawi), African Lakeside (Luo languages, Kenya), Avoiuli (Raga, Vanuatu), Ditema Tsa Dinoko (Southern Bantu languages, South Africa), Ol Chiki (Santali, India), Bété (Bété languages, Cote d'Ivoire), Afaka (Ndyuka, Suriname), and Otomaung (Naasioi, Papua New Guinea).

The four main types of visual cultural elements that will be discussed are:

- Common Cultural Icons and Images: These included religious and everyday symbols familiar and important to the local population but not necessarily linked to any specific art form.
- Influences from Traditional Art Forms: This refers to specific types of art that are practised within the culture, such as styles of painting and drawing, which are distinct from general icons and images.
- Elements From Indigenous Knowledge Systems: These include representations of farming tools and techniques, medicinal plants, important food staples, and other knowledge unique to the local Indigenous community.

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— Traditional Body Art Forms: This includes cultural practices and artwork applied directly to the body, such as traditional tattoos, cicatrisation, and tooth ablation.

The five primary motivations for development that will be discussed are:

- Resistance towards a more powerful language group, another group within the same language community, a state-internal colonial power, such as a nation seeking control over a small ethnic minority that desires autonomy, or a state-external colonial power such as the British in India or the French in Vietnam
- Unification of marginalised groups such as several small communities spread across a large geographic area that speak the same language or groups of people spread out over a large geographic area who speak different languages but identify as the same ethnic group
- Expression of cultural identity, particularly when the community feels overwhelmed with the culture of a more dominant group
- Language preservation and promotion at a time when the language group is concerned about the future of their language and culture
- Recuperation of literacy, described by Kelly (2018) as the reinvention of a script by a community that believes or has folklore about their script being lost in a catastrophic event or destroyed by an enemy people

Section 1 introduces the study, chosen scripts, and provides background information on the visual cultural elements examined in the scripts and the primary motivations behind their development. Section 2 provides background information about the scripts examined in the study and the information sources used. Section 3 explores various features of each script, with 3.1 covering the types of visual cultural elements identified in each script, 3.2 discussing these elements' relationship with sound, and 3.3 examining the main motivations behind the invention of each script. Section 4 discusses these features and their implications, followed by the concluding remarks in Section 5.

2. Exploring scripts and information sources

This section provides background information on each script and outlines the various information sources used. Section 2.1 details each script, including its language(s), speaker numbers, invention date, inventor information, writing system type, grapheme count, and Unicode status. The order of scripts was determined by how much information I could gather on each script, from most to least. I conducted interviews and reviewed written materials for scripts like Wancho, Chisoi, and Mwangwego. For others, I relied solely on available literature. Section 2.2 discusses the information sources used to gather information about the scripts.

2.1. Scripts

The Wancho script, an alphabet for the Wancho language, was invented by teacher Banwang Losu between 2001 and 2012. It is mainly spoken in Arunachal Pradesh, India, with about 60,000 speakers in Longding and Tirap districts, and in neighbouring states of Assam and Nagaland, as well as in Myanmar and Bhutan (Census of India 2011; Everson 2017). The community accepted the script after language workshops in 2011 and 2012 (Losu 2013). Comprising 44 graphemes (29 consonants and 15 vowels) plus four tone diacritics, the script has been steadily growing in use since 2012 and is now taught in many government schools for years 1–8. Accepted into Unicode in 2019, the Wancho Literary Mission continues to develop teaching materials in subjects like mathematics, science, and arts. Figure 1 shows a sample of the typeface design of the Wancho script.

As the Wancho inventor Banwang Losu is still actively involved in promoting the script and creating new teaching material, information is available directly from him about the design of the script and his motivations behind inventing it. I have also interviewed Wancho community members and members of the Wancho Literary Mission as part of my broader research. They have provided additional background information about the Wancho language and script.

Chisoi is an alphabetic script created in 1986 by Jayanta Kumar Mahata for the Kurmali language, spoken by about 600,000 people in Jharkhand, Odisha, and West Bengal (Census of India 2011; Ager 2023b). The alphabet consists of 27 letters, three diacritics, and ten numerals. Mahata invented the script to preserve Kurmali folktales (Mandal 2022). Information about Chisoi was obtained through correspondence with Mahata and Unicode proposal author Biswajit Mandal. Figure 2 shows the Chisoi script chart from Omniglot.com.

FIGURE 1

Wancho script design (Gautam 2023)



FIGURE 2.

Chisoi script chart (Ager 2023b)

𑂀	𑂁	𑂂	𑂃	𑂄	𑂅	𑂆	𑂇
a	ba	ai	aa	ga	ta	e	sa
[ɔ̃]	[bɔ̃]	[æ̃]	[ã]	[gɔ̃]	[tɔ̃]	[ẽ]	[sɔ̃]
𑂈	𑂉	𑂊	𑂋	𑂌	𑂍	𑂎	𑂏
na	i	ka	ra	ma	ha	rha	u
[nɔ̃]	[ĩ]	[kɔ̃]	[rɔ̃]	[mɔ̃]	[hɔ̃]	[r̥ɔ̃]	[ũ]
𑂐	𑂑	𑂒	𑂓	𑂔	𑂕	𑂖	𑂗
da	la	o	iny	ang	ca	ja	pa
[dɔ̃]	[lɔ̃]	[õ]	[ɲɔ̃]	[ŋɔ̃]	[tʃɔ̃]	[dʒɔ̃]	[pɔ̃]
𑂘	𑂙	𑂚	𑂛	𑂜	𑂝	𑂞	𑂟
an	ay	add	tta	jarah		sisoa	
[ʌ̃]	[iɔ̃]	[dɔ̃]	[tɔ̃]	[h̥]			
						𑂠	mutes vowel

The script has been accepted by the local community, with educational materials, a weekly newspaper, and a dictionary published in it. Ten Kurmali elementary schools in West Bengal and other organisations in Odisha and Jharkhand teach the script (Mandal 2022). A preliminary proposal for Unicode encoding was submitted in 2021, and the script was approved for encoding in January 2023, scheduled for release in September 2024 (Constable 2022).

The Mwangwego script is an abugida invented in 1979 by Nolence Mwangwego for the Bantu languages of Malawi, including Chichewa, Yao, and Tonga, each with significant speaker populations (Chichewa 2023; Yao 2023; Tonga 2023; Ager 2023e). Figure 3 (opposite page) shows a geographic breakdown of the different languages spoken in Malawi. Mwangwego developed the script after a 1977 trip to Paris, where he encountered multiple other scripts for the first time. Information about the script was obtained through correspondence with Mwangwego. The script, launched in 2003, contains 32 base syllables, called *misisi*, with an inherent vowel, similar to many other abugidas; and an additional 32 vowel modifications for each syllable for the vowels *e*, *i*, *o* and *u*, called *misiri*. A further 11 symbols called *mituyo* indicate tone and change in the sound quality of the consonants (Mwangwego 2023). Figure 4 shows the Mwangwego syllable repertoire from the 2012 Unicode proposal.

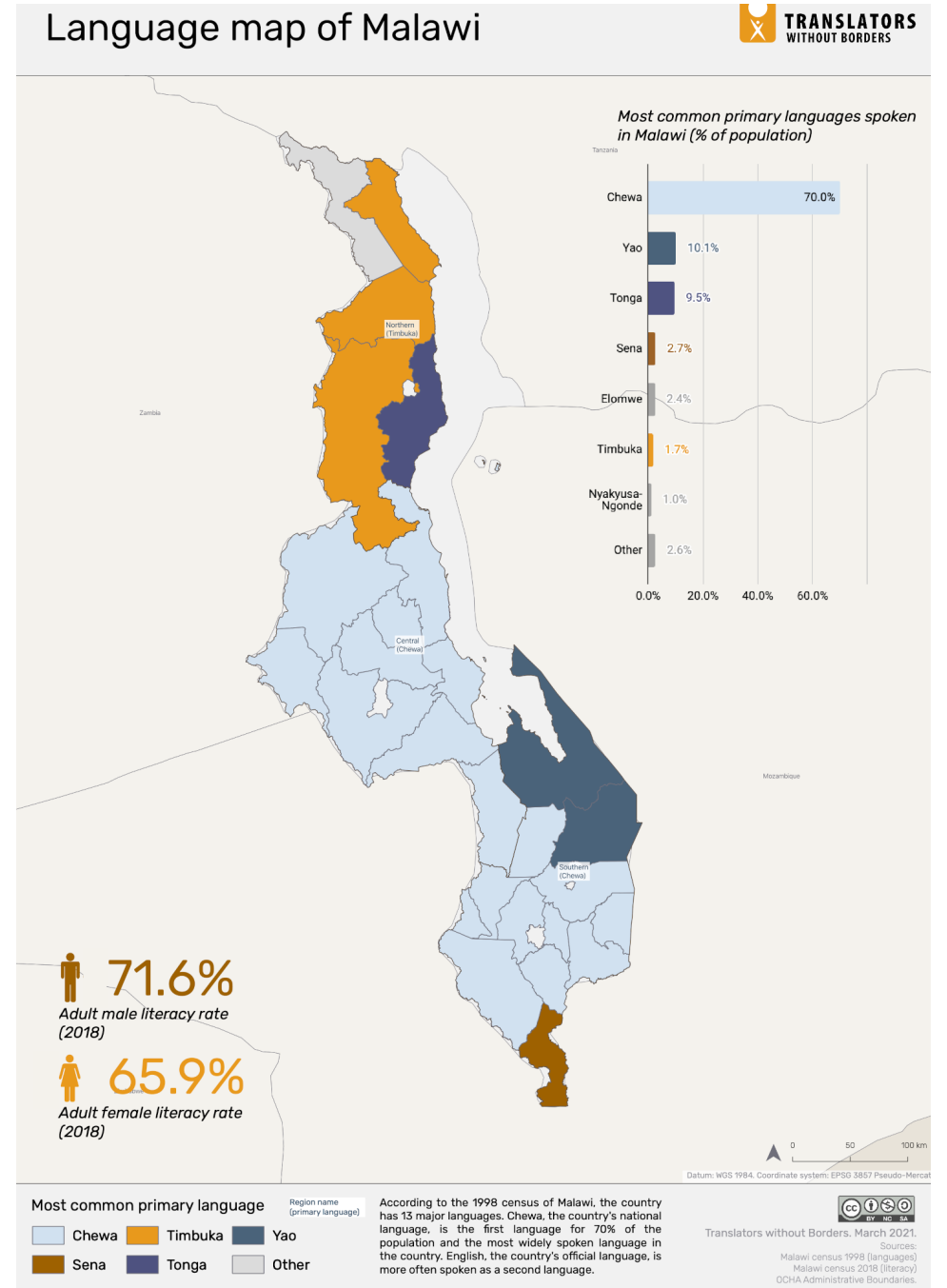
FIGURE 4.

Mwangwego syllable repertoire (Everson 2012b)

Ɔ a	Ɔ e	Ɔ i	Ɔ o	Ɔ u	Ɔ ra	Ɔ re	Ɔ ri	Ɔ ro	Ɔ ru
Ɔ ba	Ɔ be	Ɔ bi	Ɔ bo	Ɔ bu	Ɔ sa	Ɔ se	Ɔ si	Ɔ so	Ɔ su
Ɔ cha	Ɔ che	Ɔ chi	Ɔ cho	Ɔ chu	Ɔ sha	Ɔ she	Ɔ shi	Ɔ sho	Ɔ shu
Ɔ da	Ɔ de	Ɔ di	Ɔ do	Ɔ du	Ɔ ta	Ɔ te	Ɔ ti	Ɔ to	Ɔ tu
Ɔ fa	Ɔ fe	Ɔ fi	Ɔ fo	Ɔ fu	Ɔ tsa	Ɔ tse	Ɔ tsi	Ɔ tso	Ɔ tsu
Ɔ ga	Ɔ ge	Ɔ gi	Ɔ go	Ɔ gu	Ɔ psa	Ɔ pse	Ɔ psi	Ɔ pso	Ɔ psu
Ɔ gha	Ɔ ghe	Ɔ ghi	Ɔ gho	Ɔ ghu	Ɔ va	Ɔ ve	Ɔ vi	Ɔ vo	Ɔ vu
Ɔ ha	Ɔ he	Ɔ hi	Ɔ ho	Ɔ hu	Ɔ wa	Ɔ we	Ɔ wi	Ɔ wo	Ɔ wu
Ɔ ja	Ɔ je	Ɔ ji	Ɔ jo	Ɔ ju	Ɔ ya	Ɔ ye	Ɔ yi	Ɔ yo	Ɔ yu
Ɔ za	Ɔ ze	Ɔ zi	Ɔ zo	Ɔ zu	Ɔ za	Ɔ ze	Ɔ zi	Ɔ zo	Ɔ zu
Ɔ ka	Ɔ ke	Ɔ ki	Ɔ ko	Ɔ ku	Ɔ dza	Ɔ dze	Ɔ dzi	Ɔ dzo	Ɔ dzu
Ɔ la	Ɔ le	Ɔ li	Ɔ lo	Ɔ lu	Ɔ dhla	Ɔ dhle	Ɔ dhli	Ɔ dhlo	Ɔ dhlu
Ɔ ma	Ɔ me	Ɔ mi	Ɔ mo	Ɔ mu	Ɔ hla	Ɔ hle	Ɔ hli	Ɔ hlo	Ɔ hlu
Ɔ na	Ɔ ne	Ɔ ni	Ɔ no	Ɔ nu	Ɔ xa	Ɔ xe	Ɔ xi	Ɔ xo	Ɔ xu
Ɔ nya	Ɔ nye	Ɔ nyi	Ɔ nyo	Ɔ nyu	Ɔ qa	Ɔ qe	Ɔ qi	Ɔ qo	Ɔ qu
Ɔ pa	Ɔ pe	Ɔ pi	Ɔ po	Ɔ pu	Ɔ tha	Ɔ the	Ɔ thi	Ɔ tho	Ɔ thu

FIGURE 3

Language map of Malawi (Translators without Borders 2021)



Though it has about 2,000 users, the script is not yet recognised by the Malawian government or taught in schools, nor is it accepted by Unicode (personal communication 2023). The Script Encoding Initiative submitted an initial proposal in 2012 but has not resubmitted since. Plans are in place to support unencoded African scripts in 2023 and 2024.

The African Lakeside Script, comprising the Luo script and numerals, was developed for the Luo languages of East and Central Africa, spoken in countries such as Botswana, the Democratic Republic of the Congo, Ethiopia, Kenya, Sudan, Tanzania, and Uganda (Ager 2023d). Kefa Ombewa created the Luo script in 2009 for the Dholuo language, which has about 4.2 million speakers (Dholuo 2015), and Paul Sidandi developed the numerals in Botswana. The script has 26 consonant and vowel graphemes with upper and lower case versions. The numeral system is based on the number of fingers on the hand, and factors of 10 are represented by elements found in nature. Figure 5 shows the Luo script inventory.

FIGURE 5.

Luo script inventory (Ager 2023d)

aa	ba	cha	da	ee	fa	ga
a	b	ch	d	e	f	g
[a]	[b]	[tʃ]	[d]	[e/ɛ]	[f]	[g]
ng'a	ha	ii	ja	ka	la	ma
ng'	h	i	j	k	l	m
[ŋ]	[h]	[i/i]	[j]	[k]	[l]	[m]
na	oo	pa	click	ra	sa	ta
n	o	p	q	r	s	t
[n]	[o/ɔ]	[p]	[ʔ]	[r]	[s]	[t]
uu	va	wa	ya	za		
u	v	w	y	z		
[u~ʊ/u]	[v]	[w]	[j]	[z]		

A joint Unicode proposal was submitted in 2019 but is still under review (Anderson 2019b). Information was obtained from Sidandi, who indicated that the script is being trialled in several schools in Botswana and that a new academy in Kenya has committed to teaching it (personal communication 2023).

Avoiuli is an alphabetic script invented by Chief Viraleo Boborenvanua in the 1990s for the Raga language of Pentecost Island, Vanuatu (Ager 2023a). Raga is an Austronesian language spoken by around 6,500 people on Pentecost Island (Hano 2015). The Avoiuli script consists of 20 letters and ten numerals. Initially designed to be written boustrophedon (right to left and left to right in mirror style), it is usually written left to right. Figure 6 shows the Avoiuli script and numeral inventory. The script was invented as part of the Turaga Movement, which supports the restoration of traditional Melanesian customs. It has not been accepted to Unicode, and the Script Ad Hoc Committee has not yet received a preliminary proposal for encoding. According to local schoolteacher Andrew Gray, the script is currently used by a few people on the island and is not being actively promoted while its inventor is away (personal communication 2023). Although the script seems to be nearly dormant, Gray adds that it could be picked up and promoted by another political leader in the future (personal communication 2023).

a	b	d	e	g	ngg	h	i	k	l
[a]	[b/mb]	[d/nd]	[e]	[x]	[ŋg]	[h]	[i]	[k]	[l]
m	n	ng	o	r	s	t	u	v	w
[m]	[n]	[ŋ]	[o]	[r]	[s]	[t]	[u]	[f]	[w]
1	2	3	4	5	6	7	8	9	0

FIGURE 6.

Avoiuli script and numeral inventory (Ager 2023a)

Ditema Tsa Dinoko, also known as Isibheqe Sohlamvu, is a syllabic script developed for the Southern Bantu languages of South Africa, Botswana, Eswatini, Mozambique, Zimbabwe, and Lesotho (Ager 2023c). Figure 7 shows an example text in the script. It was invented

between 2010 and 2015 by a group of linguists and designers (Tolmie 2023). It is described as a featural syllabic script by Ager (2023c) and as a decolonial script and “alternative literacy in line with principles of decoloniality” by the organisation’s website (Ditema Tsa Dinoko 2022).

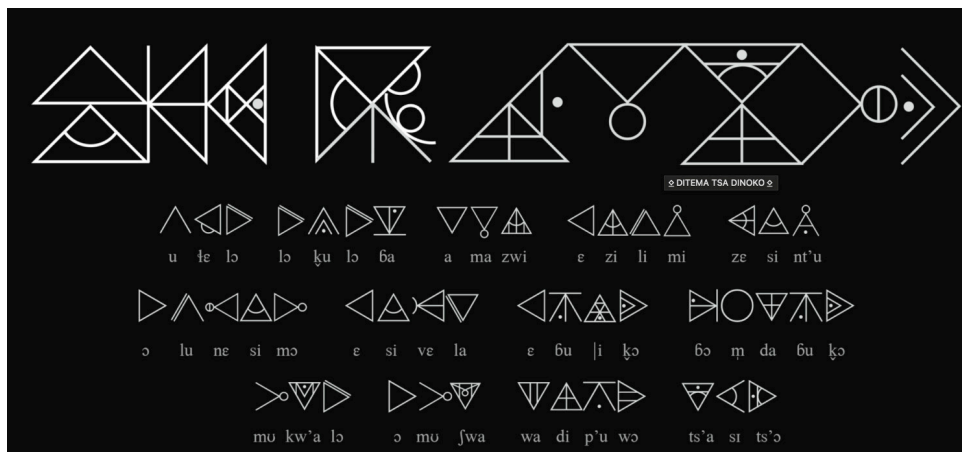


FIGURE 7. Example text in Ditema Tsa Dinoko (Ditema Tsa Dinoko 2022)

As seen from Figure 8, the design of the graphemes is meant to replicate the shape of the mouth for specific places of articulation, such as a curved line simulating the tip of the tongue resting near the alveolar ridge to block airflow for [s], a curved line outside the triangle mimicking the top teeth touching the bottom lip for [f], and so on. The direction of the triangle determines whether the vowel is open or closed. The consonant is then determined by the additional strokes or circles attached to the base triangle; for example, as stated above, an [s] is identified by a single curve inside the triangle, a [z] by a single curve with a line through it, and so on. It has not been proposed to Unicode and is promoted primarily on its website and Instagram.

OI Chiki is an alphabetic script developed for the Santali language, spoken by seven million people in India, Bangladesh, Bhutan, and Nepal (Santhali 2023). Most speakers reside in Eastern India, specifically in the states of Assam, Bihar, Jharkhand, Mizoram, Odisha, Tripura, and West Bengal. Figure 9 shows the distribution of the Santali language in Eastern India. Classified by Ethnologue as a large institutional language, Santali ranks as the third most spoken Austroasiatic language after Vietnamese and Khmer (Santhali 2023). The script was created in 1925 by Raghunath Murmu, a Santali teacher. It consists of graphemes representing single consonant and vowel sounds. Although OI Chiki is used in West Bengal and Jharkhand schools and was accepted to Unicode in 2008, not all

FIGURE 8.

Ditema Tsa Dinoko consonants (Ditema Tsa Dinoko 2022)

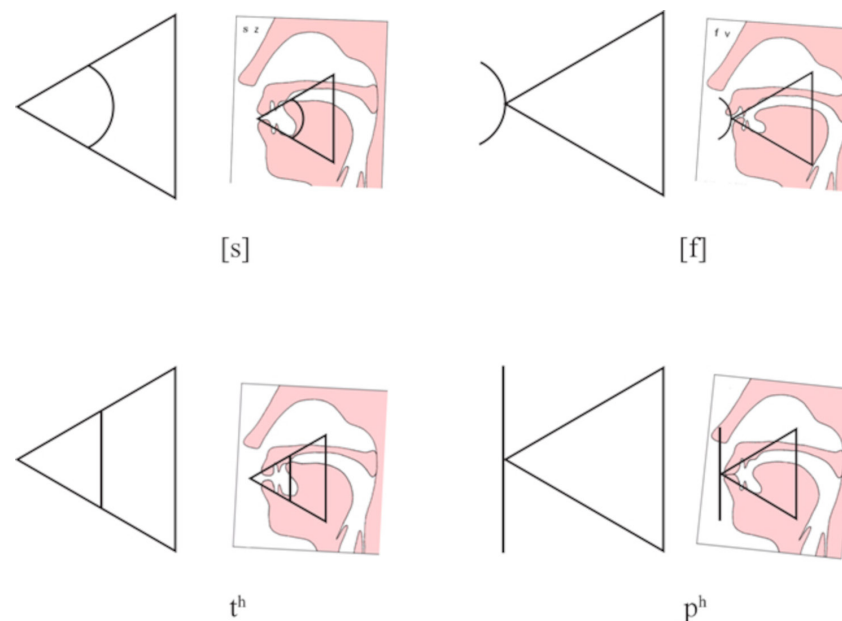
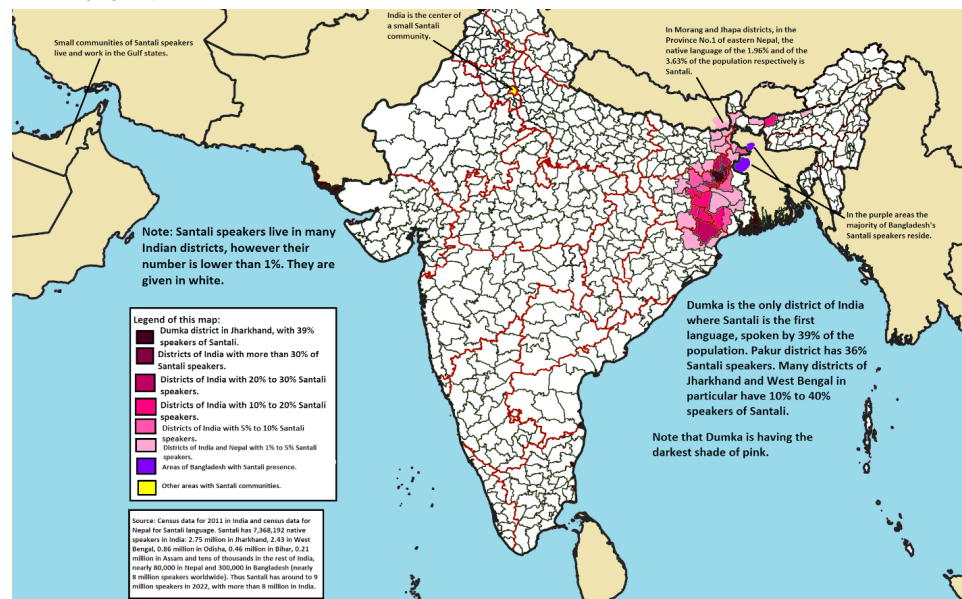


FIGURE 9.

Santali language map (Likomitros 2022)



promoted by the Sabanapeti Foundation (Everson 2012a). It is included in the Unicode Roadmap and has been used in works by local artist Marcel Pinas, enhancing its visibility (Afaka 2020). Figure 13 shows Afaka artwork by Pinas.

FIGURE 13.

Afaka artwork by Marcel Pinas (Pinas 2020)



The Otomaung script was developed during the Bougainville Crisis (1988–1998) for the Naasioi language of Papua New Guinea. Invented by Chief Peter Karatapi, the alphabet contains 26 graphemes and is intended to function as a universal script for Bougainville languages (Ager 2023f). The Naasioi language is spoken by around 20,000 people (Naasioi 2023). Figure 14 displays the Otomaung graphemes in their upper-case, lower-case, and ornamental forms. Although the script has not been proposed to Unicode, its significance may rise with Bougainville’s advances toward political independence (Kelly 2021).

Table 1 displays the Unicode status of the scripts from the study and the corresponding dates of their submissions and encodings, including the proposal duration from start to finish. This information is essential as it indicates whether each script is “encoded”, “accepted”, or “not proposed”. Understanding these timelines is vital to appreciate the broad range of durations that scripts can take to be encoded. The Script Encoding Initiative is aware of all scripts listed as “not proposed” and is collaborating with researchers and community members to develop proposals for these scripts.

FIGURE 14.

Otomaung inventory from Omniglot.com (Ager 2023f)

a	b	c	d	e	f	g	h	i
j	k	l	m	n	o	p	q	r
s	t	u	v	siouma w	nari x	kapoo y	tampara z	

Script	Status	Date submitted	Date encoded	Length of application
Wancho	Encoded	2017-01-23	2019-03-05	2 years 2 months
Chisoï	Accepted	2021-05-29	2024-09-01 ¹	3 years 4 months ²
Mwangwego	Proposed	2012-07-23	-	-
African Lakeside	Not proposed	-	-	-
Avoiuli	Not proposed	-	-	-
Ditema Tsa Dinoko	Not proposed	-	-	-
Oï Chiki	Encoded	1999-01-29	2008-04-04	9 years 3 months
Bété	Not proposed	-	-	-
Afaka	Proposed	2010-12-21	-	-
Otomaung	Not proposed	-	-	-

TABLE 1
Scripts and their Unicode status

2.2. Information Sources

For the first stage of this research, identifying which visual cultural elements were employed in each script and the inspiration behind their development, I reviewed publicly available information about the scripts, such as Wikipedia articles, websites published by promoters of the script, and academic literature. In some instances, information about script design was readily available. For example, both Ditema Tsa Dinoko² and Oï Chiki³ have websites explaining the inspirations behind their script design in detail. Through these sources, I was able to determine the visual cultural elements for these two scripts, as well as Bété, Afaka, and Otomaung.

Where scripts lacked publicly available information, I attempted to contact either the inventor or someone known to be highly involved with developing or promoting the script⁴. I spoke directly with the inventor of Wancho (WhatsApp, Zoom, and in-person), the inventor of Mwangwego (Facebook Messenger), the inventor of Chisoï (Facebook Messenger) and its Unicode proposal author (Facebook Messenger), and the inventor of the Luo Numerals⁵ (email). I was unable to contact the inventor

² <https://isibheqe.org.za/>

³ <https://wesanthals.tripod.com/>

⁴ I have standardised punctuation and use of italics from my written interviews to meet linguistic norms.

⁵ In the African Lakeside Script, it is the numeral system rather than the alphabet which contains visual cultural elements.

of the Avoiuli script but was able to speak with a local teacher who is familiar with the inventor and script (Facebook Messenger). In a modified form of an online personal interview, I asked these individuals direct questions about the visual cultural elements they employed in the script design and the motivations behind their development. All interviews were conducted in English.

3. Features of Each Script

This section will discuss features of each script with 3.1 covering the visual cultural elements that were found to be implemented into the scripts in the study. Additionally, 3.2 will examine the scripts' relationships with the use of acrophony and the rebus principle. Finally, 3.3 will suggest the main motivations behind the development of all scripts.

3.1. Visual Cultural Elements

This section examines visual cultural elements in each script (see Table 2). Evidence from interviews and written materials illustrates these elements and their integration, supplemented by examples. Common cultural icons and images are present in six scripts: Wancho, Chisoï, Mwangwego, Oï Chiki, Bété, and Afaka. Traditional and body art are present in three scripts each: Chisoï, Avoiuli, and Ditema Tsa Dinoko, and Wancho, African Lakeside, and Otomaung, respectively. Indigenous knowledge systems are found in two scripts: African Lakeside and Ditema Tsa Dinoko.

TABLE 2.
Scripts and incorporated visual cultural elements

Script	Common Cultural Icons and Images	Traditional Art	Body Art	Indigenous Knowledge System
Wancho	X		X	
Chisoï	X	X		
Mwangwego	X			
African Lakeside			X	X
Avoiuli		X		
Ditema Tsa Dinoko		X		X
Oï Chiki	X			
Bété	X			
Afaka	X			
Otomaung			X	

In his self-published article on the Wancho script that Losu shared with me, he states (2013: 2):

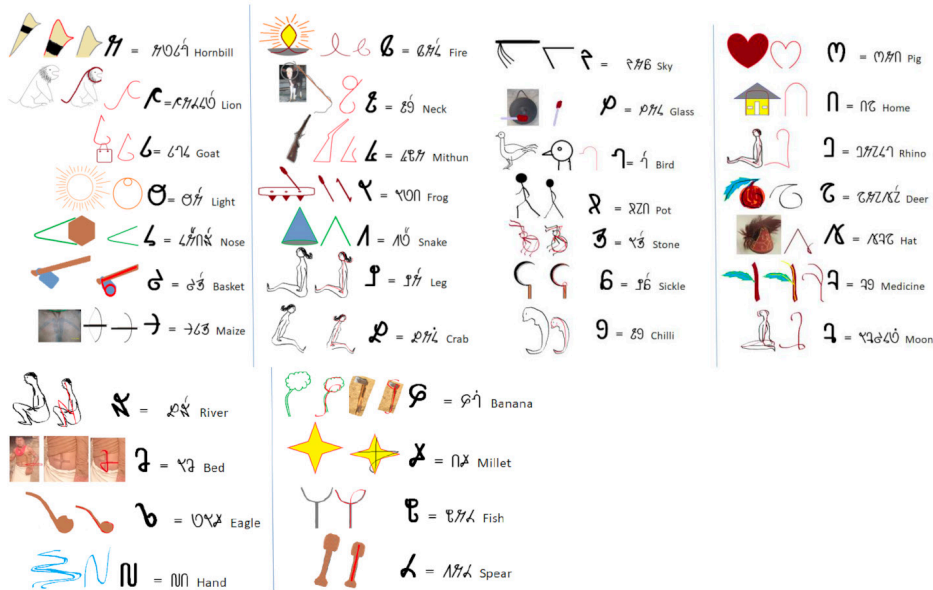
Orthography of Wancho Script represents human actions, birds, insects, trees, tattoos, traditional handy-crafts, house, sun, star, etc. *ʃ* is a feather of hornbill which is very significant in our culture, we used it in our headgear during festival and several occasions. Hence, it is relevant to local people and easy to memorise and understand.

In my interview with Losu, he also explained to me that he knew from the beginning that the characters in the script should be familiar to the people; otherwise, it would be difficult for them to understand, and this was his reason behind choosing familiar local symbols for each character. Losu also explained to me that some of the characters are based on the rebus principle; for example, the grapheme *ʃ* *tʃa* is based on a lion, the word for lion in Wancho is *tʃanu*, which starts with the sound *tʃa* (personal communication 2024).

Losu has provided a chart demonstrating the etymology of 36 of the Wancho graphemes in Figure 15.

FIGURE 15.

Wancho graphemes and icons chart (Losu 2013)



Interviews with Wancho community members also revealed further information about the script's design. When asked about the inspiration behind the design of the script, one participant stated, "Yes, there was a very good idea that some letters are designed with the scripture or with the crafts of our Wancho area..." (personal communication 2023). One participant spoke to me about Wancho traditional body art stating, "tattoo for men is for bravery and for women is to signify stages of age since puberty up to marriage" (personal communication 2023). I followed up on this report of traditional tattoos being found in the design of the script with Losu, who confirmed that two of the graphemes are based on traditional tattoos. Images 16 and 17 below indicate that the design of these graphemes comes from a female chest tattoo and a navel tattoo (personal communication 2024). Through these interviews, we can determine that the script employs common cultural icons and images and influences from traditional body art in its design.

FIGURE 16.

Wancho chest tattoo and grapheme (personal communication 2024)



FIGURE 17.

Wancho navel tattoo and grapheme (personal communication 2024)



Through my correspondences with the Chisoi inventor and Unicode proposal author, I have learned that the inventor collected cultural symbols, including Alpanas and Rangolis, two forms of decorative patterns created on the floor using various powders such as limestone, ochres, flour, sand, etc. (Alpana 2023; Rangoli 2023), which he then used for the design of his new script. Mandal and Mahata state that

many of the graphemes are based on the Kurmali deity *Buḥābābā*⁶ (personal communication 2023), also known as the svastika or “conductive to well-being” (Britannica 2023; Mandal 2022). Mandal (personal communication 2023) states:

Buḥābābā is the supreme deity of the Kurmali community, *Buḥā* means old and *bābā* refers to father. *Buḥābābā* is nothing more than Bholababa another name of Lord Shiva of Hinduism. They believe *Buḥābābā* is the first humanoid of this planet and all of us are his sons.

FIGURE 18.

Kurmali traditional symbols (Mandal 2022)



Although I have not seen any specific examples about the origin of the design besides those shown in Figure 18, this script appears to employ common cultural icons and images as well as influences from traditional art, similar to the design of Ditema Tsa Dinoko discussed below.

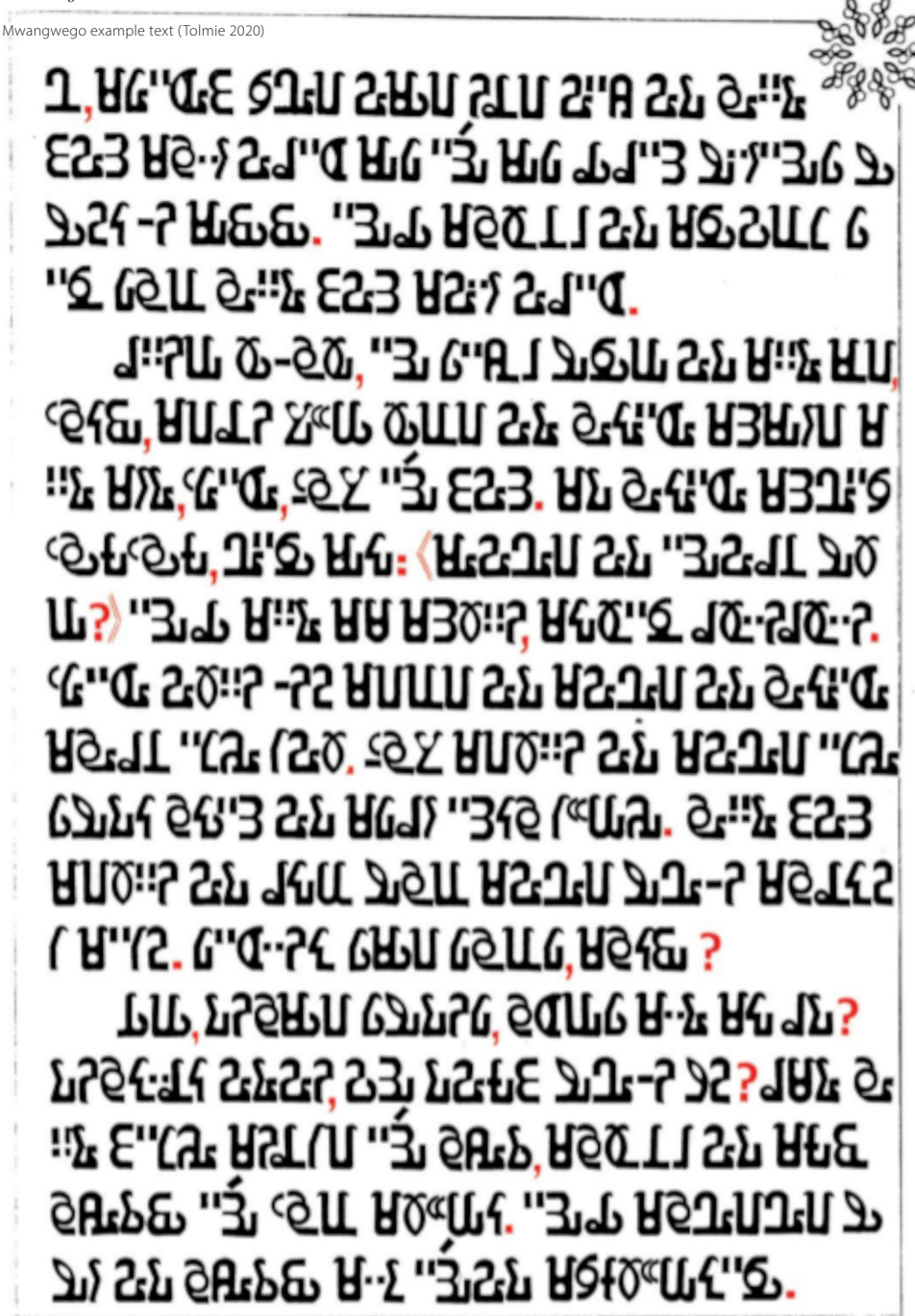
In my correspondence with the inventor of the Mwangwego script, when asked about how he came up with the design of the script, Mwangwego (personal communication 2023) responded:

It was not easy to design the script and that’s why it took a long time to finish the project. First, I had to decide on the type of system. When I realised that syllables of Malawian languages are detached, I opted for a syllabic system in which a symbol stands for a syllable. I had to create symbols that I assigned to syllables, and this was the main and most difficult part of the invention. Three sources of symbol: imagination, household objects like ‘spear’, ‘gold’, ‘clay’, ‘pot’, ‘jug’, and ‘sickle’. From nature: ‘root’, ‘leaf’. Human body: ‘palm’, ‘ear’. *La* is from a ‘folded leg when walking uphill’, *cha* is from ‘ear’ (when handwritten), *tha* is from a ‘sickle’, *a* and *na* from a ‘jug’, *ba* and *ja* from a ‘clay pot’, *ya* and *qa* from a ‘leaf’. During refinement of the script, I dropped or modified some symbols in order to make them compatible with new additions as I went on.

6 Top left image in Figure 18

FIGURE 19.

Mwangwego example text (Tolmie 2020)



Based on the information provided by the inventor, Mwangwego designed the symbols using icons and images familiar to him, such as household objects, elements from nature, the human body, and tools. In this way, Mwangwego drew inspiration from common cultural icons and images to create his symbols.

Unlike other scripts discussed in this paper, the Luo numeral system is of interest when discussing visual cultural elements in the African Lakeside script. In my email exchange with Sidandi, he explained that the Luo numerals were his own recreation of the Lost Hebrew Numbers of Botswana. The Luo Tribe claims to have migrated from Egypt around the same time as the Jews, although they do not claim to be Jewish. Sidandi (personal communication 2023) states:

A geographic search and word search was made in the Atlas and the Bible. Amazingly, over 40 Luo place names were found in Sudan, Southern Egypt and Israel. The Luo language was found to have clues on how to represent the numbers from one (1) to ten (10). The cardinal numbers were based on digits of the hand. These are represented as sticks in the Luo language. The large numbers from 10 are represented by elements found in nature. For example, 10 is called *Apar*, meaning remember and multiples are derived from counting bottoms not heads. So, 10 was represented as a 'W' with rounded base. 100 is based on two hands facing each other from the word *miya* or give me. A thousand is based on the gap at the lower teeth after extraction of the two central incisors. The gap used by Nilotes who are cattle herders prone to tetanus or lock jaw provided an opportunity to force feed the person. The Luo word for force feeding is *gag* so if you say *gagna jatuo* you are force feeding an ill person. The Herero of Namibia also have the same method of tooth extraction which has been made into a custom similar to circumcision. The word for 1000 is *gana* so it came to be represented by the sign of a gap and so on. Each cardinal number has a horizontal base and most of the large numbers.

FIGURE 20.

Luo numeral inventory from Omniglot.com (Ager 2023d)



In his explanation, Sidandi maintains that the numeral system, illustrated in Figure 20, contains certain digits influenced by the Indigenous knowledge system and integrates elements of traditional body art, specifically tooth ablation or ritual tooth removal. The practice of tooth ablation by the Nilotes, originally performed for medical reasons, has evolved into a coming-of-age ritual. Consequently, it is regarded in this study as a form of traditional body art.

Although the inventor may have drawn some inspiration from the Latin alphabet, the Avoiuli script bears little resemblance to it. Gray (personal communication 2023) states that the inventor claimed to have 'rediscovered' the alphabet and that he drew inspiration for the design from traditional Vanuatu sand drawings, as seen in Figure 21, similar to the Rangoli and Alpanas used by the Chiso script but drawn directly in the sand. We can see below the similarities between the script and the sand drawings, which show that the script employs a form of traditional art as a visual cultural element in the overall design of this script.

FIGURE 21.

Vanuatuan sand drawing (Kastom
Stories and Sand Drawing 2014)

The design of Ditema Tsa Dinoko takes its inspiration from Litema, a 1500-year-old form of Sesotho mural art consisting of geometric patterns usually engraved and painted on the outer walls of homes (Grant & Grant 1998: 45; van Wyk 1998: 88), as seen in Figure 22, and is “based on well-established regional symbolologies and received wisdom of Indigenous knowledge systems” (Ditema Tsa Dinoko 2022). The graphemes in the system are not based on specified elements but were designed, as a whole, to resemble the traditional art form of Litema, which in itself draws from the existing Indigenous knowledge system.

FIGURE 22.

Litema mural artwork on a local house (Beyer 2003)



The main feature of the Ol Chiki script is that every grapheme is based on common icons or images familiar to the Santali community. The script’s website states, “letters of Ol Chiki script are also derived from the physical environment and what surrounds the people – hills, rivers, trees, birds, bees, plough, sickle – the list is endless” (Ol Chiki Script 2022). Figure 23 shows the elements all graphemes are based on; for example, the grapheme for /ɔ/ comes from a burning fire, /a/ comes from someone working in the field, /u/ comes from a vessel for holding food, /t/ and /d/ from a mushroom and so on. This script differs from others like Ditema Tsa Dinoko as every grapheme is based on common cultural icons and images rather than the overall look of the script mimicking a traditional art form.

FIGURE 23.

Ol Chiki grapheme inventory and explanation (Ol Chiki Script 2022)

–						/A/ : The shape of burning fire.
						/AT/ : The shape of Earth.
						/AG/ : The shape of mouth during vomiting which produces the same sound as the name of the letter.
						/ANG/ : Blowing air.
						/AL/ : Writing.
						/AA/ : The shape of working in the field with a spade.
						/AAK/ : Sound of Swan or shape of a bird.
						/AAJ/ : The shape of a person pointing towards a third person with right hand(saying he).
						/AAM/ : The shape of a person pointing towards a second person with left hand(saying you).
						/AAW/ : Opening lips.
						/I/ : Bending tree .
						/IS/ : The shape of plough.
						/IH/ : The shape of hand ups.
						/INY/ : The shape of a person pointing towards himself or herself with left hand.
						/IR/ : The shape of a sickle used for cutting or reaping(IR).
						/U/ : The shape of a vessel used for preparing food.
						/UCH/ : The shape of a peak of a mountain which is usually high.
						/UD/ : The shape of mushroom.
						/UNN/ : The picture of a flying bee which makes this sound.
						/UY/ : The shape of a man bending towards ground to cut something.
						/E/ : Overflowing rivers changing course.
						/EP/ : A person receiving with both hands.
						/EDD/ : The shape of a man with two legs stretching towards his chest and mouth.
						/EN/ : The picture of thrashing grains with two legs.
						/ERR/ : A picture of a path that turns to avoid an obstruction or a danger.
						/O/ : The shape of mouth when sounding this.
						/OTT/ : The hump of a camel.
						/OB/ : Curly hair.
						/OV/ : Nasalized.
						/OH/ : The figure of a man throwing something with one hand.

Ə	Ō	Ḡ	Ḑ	Ḑ
A (ə)	At (ot)	Ag (ok')	Ang (oŋ)	Al (ol)
[ə]	[t]	[k', ɔ]	[ŋ]	[l]
Ə	b	Ḑ	Ḑ	Ḑ
Aa (a)	Aak (ak)	Aaj (aɔ')	Aam (am)	Aaw (aw)
[a]	[k]	[ə', ɔ]	[m]	[w/v]
Ḑ	Ḑ	Ḑ	Ḑ	Ḑ
I (i)	Is (is)	Ih (if)	Iny (iŋ)	Ir (ir)
[i]	[s]	[h, ʔ]	[ŋ]	[r]
Ḑ	Ḑ	Ḑ	Ḑ	Ḑ
U (u)	Uch (uc)	Ud (ut')	Umm (um)	Uy (u)
[u]	[ɔ]	[t', d]	[m]	[j]
Ḑ	Ḑ	Ḑ	Ḑ	Ḑ
E (e)	Ep (ep)	Edd (ed)	En (en)	Err (er)
[e]	[p]	[d]	[n]	[r]
Ḑ	Ḑ	Ḑ	Ḑ	Ḑ
O (o)	Ott (ot)	Ob (op')	Ov (ov)	Oh (of)
[o]	[t]	[p', b]	[w]	(ɔ) ^h

In their report on the graphic design of the Bété script, Yeo and Cao (2021: 160) state, “Each syllable is coded by a referent in the Bété language, generally borrowed, according to the author’s stated intention, from the acts or objects of daily life”. This clarifies that Bété employed common cultural icons and images in his script design. Furthermore, it can be seen that he utilised a method similar to the rebus method in the creation of his script with Yeo and Cao (2021:160), stating:

Bruly Bouabré’s “alphabet” book is based on logic similar to that of the rebus, and therefore relies on the indispensable peg of the drawing: each syllable is coded by a referent in the “Bété” language, generally borrowed, according to the author’s stated intention, from the acts or objects of daily life.

For example, it can be seen in Figure 11 that various graphemes appear to be based on different foods (C5R3⁷ <FRE> – berries, C3R18 <DRĒ> – apple), plants (C17R2 <TLŌ> – flower, C15R16 <PROU> – potted plant), animals (C21R4 <SEAU> – snail, C15R7 <PRE> – fish, C19R20 <YO> – small fish), and activities (C4R20 <FLA> – walking together, C16R1 <NU> – sitting at a table).

7 This refers to location of the grapheme in the chart, C5R3 refers to column 5, row 3

The Afaka syllabary consists of graphemes whose design comes from the Latin and Arabic scripts and “traditional African symbols” (Ager 2023g). Everson (2012a: 1) states, “The script appears to be unrelated to any other script, its glyphs having been developed on the principle of the acrophonic rebus.” Figure 24 shows which Afaka graphemes utilise acrophony. Scriptsource (Afaka 2023) additionally states:

A more controversial view is that the symbols already existed prior to the creation of the script, but they had religious, rather than phonetic, significance. Many of them resemble acrophonic rebuses – stylised pictures of something which begins with the sound the symbol stands for – from Africa, where they may have been used in religious ceremonies. Some Nenge may have felt using the sacred symbols for mundane or secular purposes would be irreverent.

FIGURE 24.

Afaka graphemes and explanation (Everson 2012a)

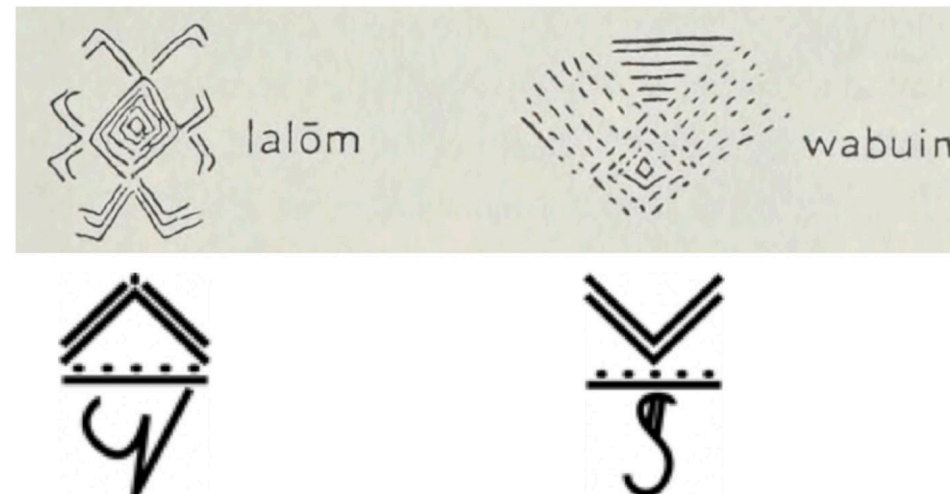
𐌲	GI	<i>gi</i> ‘give’ (two hands)
𐌳	WE	<i>wi</i> ‘we’ (two hands)
𐌴	MI	<i>mi</i> ‘me’ (glyph reversed from YU)
𐌵	YU	<i>yu</i> ‘you’ (glyph reversed from MI)
𐌶	KO	<i>kon</i> ‘come’ (glyph reversed from GO)
𐌷	GO	<i>go</i> ‘go’ (glyph reversed from KO)
𐌸	TU	<i>tu</i> ‘two’ (two strokes)
𐌹	FO	<i>fo</i> ‘four’ (four strokes)
+	NEN	<i>nen</i> ‘name’ (a cross used in signing one’s name)
⊙	BE	<i>a de anga bee</i> ‘she has belly; she’s pregnant’ (the dot helps to distinguish this from 𐌺 NYA)
𐌺	U	<i>uku</i> ‘pair of hooks’ (character used for both <i>u</i> and <i>ku</i>)
𐌻	KA	<i>kaka</i> ‘faeces’
𐌼	PI	<i>pisi</i> ‘urine’

The grapheme chart suggests that this script employs numerous common cultural icons and images, in addition to its influences from Latin and Arabic.

In his report on Otomaung, Kelly (2021:1) states, “the script exhibits a formal influence from cursivised Roman while its inventory of letters presents as a cypher for the English alphabet” and (2021:8) “a writing system is designed to model aspects of linguistic structure, usually phonological, of a language or languages. A cypher script, meanwhile, models another writing system.” The Otomaung script has three primary forms in which it can be written, similar to our versions of lower case, upper case, and bold or decorative. The lower and upper-case forms draw inspiration from the Latin script however, it is the decorative form of the script which was inspired by the ceremonial scarring practices of the local Naasioi. Ceremonial scarring is not practised as widely in modern-day Naasioi culture

FIGURE 25.

Otomaung grapheme design example (Kelly 2021)



as it was in the past, and now, “for the promoters of the Naasioi Otomaung alphabet, the script is seen to represent these once prevalent sacred designs” (Kelly 2021: 16). Figure 25 shows Naasioi ceremonial scarrings and their corresponding graphemes. This information indicates that the Otomaung script uses influences from traditional body art in its design.

3.2 Common Cultural Icons and Images’ Relationship with Sound

Scripts incorporating common cultural icons and images can be categorised into three subcategories based on how the elements are used: with the rebus principle, the acrophonic principle, or with no connection to sound (see Table 3). The rebus principle uses existing symbols for their phonetic value, regardless of their original meaning, while the acrophonic principle names graphemes so that the grapheme’s name begins with the grapheme itself.

Two scripts, Wancho and Bété, utilise the rebus principle, and one, Afaka, employs acrophony. Wancho and Bété use familiar icons and images for their graphemes, ignoring the icons’ meanings. Afaka’s graphemes’ names start with the sound they represent. Though only three scripts in the study use these principles, it is noteworthy that these ancient practices continue in modern script creation. This parallels ancient script studies, where the use of acrophony and the rebus principle offers insights into script development motivations and contexts, both historically and contemporarily. While less common today, their continued use highlights enduring trends and innovations in script creation.

TABLE 3.

Common cultural icons and images relationship with sound

Script	Rebus	Acrophonic	No connection
Wancho	X		
Chisoï			X
Mwangwego			X
Oï Chiki			X
Bété	X		
Afaka		X	

3.3. Motivations for Script Development

This section discusses the main motivations behind developing these scripts, as identified in the study and reflected in Table 4. Derived from primary and secondary sources, the motivations include the unification of marginalised groups and resistance towards powerful groups, with nine and eight instances, respectively. Expressing cultural identity was common, with six cases. Recuperation of literacy and language preservation were less common, with three and two instances, respectively.

The Wancho script development was influenced by multiple factors. In Arunachal Pradesh, people also speak Assamese, Hindi, and English, causing a language shift. Interviewees mentioned past written communication in English or Assamese (personal interview 2023). The Wancho script resists this shift, protecting the language from endangerment. It also serves as resistance against state-internal (Hindi) and state-external (English) colonial languages. Interviewees highlighted that the script aimed to unify all Wancho dialects, not just those in Longding District.

TABLE 4.

Script and motivations behind their development

Script	Resistance	Unification	Cultural Identity	Language Preservation	Recuperation of Literacy
Wancho	X	X		X	
Chisoï	X	X	X		
Mwangwego	X	X			X
African Lakeside	X	X	X		X
Avoiuli	X		X		
Ditema Tsa		X	X		
Dinoko					
Oï Chiki	X	X			
Bété		X	X	X	
Afaka	X	X			X
Otomaung	X	X	X		

When asked if the script faced any opposition during its adoption, one of the interviewees (personal interview 2023) responded:

— Actually, there is not directly an opposition, just confusion... Banwang Losu belongs to Kamhua Noknu village, it is in Pancho circle, and we are belonging to Longding area, there is also Wakha area, we have nine blocks, and so as I told you there is tonal variation, so this is not an opposition but a confusion. So many people used to say Kamhua Noknu language cannot be spoken by all Wancho. How can it be taught to all Wancho, it is not possible, it is not an opposition it is a confusion. So as a member I told them Wancho script is not to promote any particular language or language of that area it is a method of sound, already I told you that there is a sound, we cannot write in English or Hindi our own names but in this Wancho script we can write our name in the perfect way, there is no opposition but a confusion of the people.

Government workshops in 2011 aimed to preserve Wancho, and many interviewees were optimistic about the script promoting language preservation for future generations.

The development of the Chisoï script can be inferred from the sociolinguistic and political context. The Unicode proposal indicates the language was written with three other scripts, suggesting resistance towards these more powerful scripts and unification of Kurmali-speaking communities. The script's use of Rangolis, Alpanas, and other cultural symbols expresses cultural identity, which other scripts could not achieve.

When asked about the influences behind the development of his script, Mwangwego (personal communication 2023) states:

— In October 1977, while undergoing a training in Library management, I saw for the first time, in an encyclopaedia, different writing systems for Arabic, Chinese, Greek, Hebrew and Hindi. I was puzzled and wondered why we, in Malawi, were writing our languages with the system brought by colonisers. Then the verb 'kusimba' in my language, Kyangonde, and 'kulemba' in Chichewa (to write) made me believe that people in this part of Africa used to write before the arrival of Europeans because a verb cannot exist without an action. The writing system must have been destroyed by colonisers in order to dominate better. Therefore, I decided to create a system for writing all Malawian indigenous languages. Today, when we write our languages with this script, we

feel decolonised in our minds. Each time I want to write in Chichewa, my brain switches to Mwangwego script and it switches to the Latin alphabet when I have to write in English, French or Portuguese.

Mwangwego's creation appears to be driven by a desire to reclaim a lost literacy, as suggested by his interpretation of linguistic evidence in his native languages. However, it's essential to approach this narrative critically. While Mwangwego may see this as reclaiming a pre-colonial tradition, it could be interpreted as a folkloric justification rather than a historical reality. Nonetheless, his invention of the script was a deliberate effort to resist colonial influences and unify Malawian languages, reflecting his broader goal of cultural and linguistic decolonisation.

The Luo alphabet in the African Lakeside script incorporates cultural identity through its design, inspired by the practice of children writing on the ground. In my email exchange with Sidandi, he explains "The ABC was designed around a horizontal line on which letters were anchored. This is derived from the practice of children being taught to write on the ground before writing on the black board" (personal communication 2023). Sidandi's explanation of the numerals based on a legend about missing Hebrew numerals exemplifies reclamation of literacy. The script started as a project to decolonise the alphabet and better capture Dholuo sounds (personal communication 2023). The script promotes all Indigenous languages of the region, unifying marginalised groups.

Avoiuli was explicitly invented for an Indigenous movement that sought to return to traditional ways of life and away from Western Society. This suggests that it was, first and foremost, a form of resistance against the more powerful language groups in Vanuatu and Western Society as a whole. Not only is this movement an expression of cultural identity, but the script's design, incorporating traditional sand drawings, reflects this as well.

As Ditema Tsa Dinoko was developed by a team of linguists and designers to be used for all of the Southern Bantu languages, it predominantly serves as a tool of unification for marginalised Indigenous language groups spread across Southern Africa. The use of Litema as the inspiration for the overall design of the script likewise serves as a strong expression of Southern African cultural identity that the inventors wanted to promote simultaneously with the new script.

The OI Chiki script appears to have been created to unify marginalised Santali-speaking communities, distancing them from state-internal Indic scripts and addressing the shortcomings of using the Latin script for Santali. The organisation's website states, "OI Chiki is alphabetic and does not share any of the syllabic properties of other Indic scripts" (OI Chiki Script 2022). This differentiation highlights its resistance to

other scripts. However, the promotion of OI Chiki is seen by some as divisive and hindering language development. During its Unicode application, some Santali communities protested, favouring the Latin script for its longer history and broader acceptance, arguing that OI Chiki would divide rather than unite Santal communities across India, Bangladesh, Nepal, and Bhutan (Raska 2002). Although proponents of OI Chiki intended unification, it's essential to recognise that different communities may perceive such initiatives differently, especially in such a geographically and culturally diverse region.

The Bété syllabary may have been invented by Bouabré to unite all Bété languages in Cote d'Ivoire, similar to Ditema Tsa Dinoko. Bouabré envisioned it as a universal script, particularly for African languages (Schuster 2018). As an artist, Bouabré aimed to preserve and promote Bété languages and express local cultural identity. Schuster (2018: 1) states:

— One way Bruly Bouabré preserved Bété culture was by recording Bété heritage and myths in crayon and ink drawings on postcard-sized pieces of paper. The Bété people did not have a writing system for their spoken language, so the artist created one and used it, along with French, to incorporate descriptions of these scenes within the composition.

Although this script has yet to gain much attention outside the art world, it holds the potential to serve as a crucial preservation tool for the Bété languages, which continue to face a decline in the number of speakers. Bouabré's creation of this script not only aims to document endangered languages but also embeds the heritage and culture of the Bété people within the script, serving as an instrument for cultural resilience.

Although Afaka resources, particularly those in English, are scarce (most are in Dutch), literature provides clues about the script's development influences. Pakosie and Dubelaar (1988: 2) note that Atumisi told a missionary in Paramaribo that the script was for his people's benefit. This suggests it aimed to unify the marginalised Ndyuka people spread across central and eastern Suriname. Huttar (1992: 10) reports an elder advocating for the script's adoption, saying, "A Frenchman writes in his way, a Dutchman in his, Chinese and Javanese each have their own scripts; but now God has wanted to give Ndyuka a script – so don't reject it!" This highlights the goal of gaining legitimacy for the language. This relates to Kelly's (2018) discussion of how script creation is often framed within narratives of 'recuperation of literacy,' where such efforts are viewed as attempts to reclaim or invent an 'ancient tradition' as seen in Southeast Asian contexts. Huttar likewise (1992: 9) mentions that "Afaka received visions from God instructing him to develop the script and teach it to others" and (1992: 15) that:

Many of these scripts were developed by men who, like Afaka, saw themselves as or were perceived by their peers to be prophets, often active in the development of a new variety of local religion, which often was a fusion of traditional and outside (Christian or Muslim) beliefs and practices.

The influences behind the development of Otomaung seem apparent. It appears that the creation of the Otomaung Cultural Society and the Otomaung script during the Bougainville Crisis was intended to promote and preserve the cultural identity and values of the Otomaung-speaking peoples. Additionally, the script seeks to act as a universal script for the languages of Bougainville, including English, unifying the Indigenous language groups (Kelly 2021: 20). However, it also functions as a form of resistance to the outside world, particularly the government of Papua New Guinea.

4. Emergent Themes

Implementing visual cultural elements into a script may significantly enhance community acceptance. According to interviewees, three of the scripts in this study have already been encoded to Unicode⁸, and two are seeing an increase in user numbers. However, the impact of visual cultural elements on their acceptance remains to be seen for the remaining scripts. Common cultural icons and images appear to be the most prevalent elements found in these scripts due to their ease of implementation and accessibility. Although handwriting and hand drawing are diminishing due to digital design, these icons and images are preserved within the scripts.

Traditional art forms and body art, while less common, serve as important tools for cultural preservation. As these art forms face extinction due to changing cultural practices and globalisation, scripts may act as repositories for preserving them and the knowledge they embody. For instance, Ditema Tsa Dinoko preserves Southern African mural art, Chisoï conserves Rangolis and Alpanas from India, and Avoiuli preserves traditional sand drawings from Vanuatu. Similarly, body art practices like cicatrisation and tooth ablation are referenced in the Wancho, Otomaung, and African Lakeside scripts. However, it's important to note that this association might be more of a retrospective explanation rather than an intentional act of preservation, as Kelly (2018) cautions against making strong claims of direct continuity between scripts and traditional practices.

Elements from the Indigenous knowledge system are less commonly observed, possibly due to their abstract nature, which

8 Including Chisoï which will be added with Unicode Version 16.0

can make them more challenging to render. However, they serve as powerful tools for preserving local knowledge and culture. Incorporating these elements helps in their survival and preserves Indigenous knowledge systems, safeguarding crucial cultural knowledge.

Unification of marginalised groups appears to be the most common motivation behind script development, followed by resistance towards more powerful groups. Most scripts seem to reflect both motivations, which may indicate communities' efforts to resist outside influences while attempting to unite minoritised groups. Expression of cultural identity also emerges as a prevalent motivation, often aligning with the incorporation of visual cultural elements to potentially showcase local identity. Despite feeling threatened by cultural loss, these communities strive to share their heritage with the world.

Recuperation of literacy emerged as a relatively uncommon yet intriguing motivation, identified in the Mwangwego, African Lakeside, and Afaka scripts. This reflects communities' narratives of losing writing and their struggles to reclaim it. Exploring other cultures and similar legends of literacy loss could provide valuable insights into the desire to recuperate literacy and its potential role in script creation. Surprisingly, language preservation is the least common motivation, explicitly mentioned in only two cases: Wancho and Bété. However, it has become an indirect outcome for scripts like Chisoï and OI Chiki, which have been encoded to Unicode, enhancing their chances of survival. The invention of scripts for all languages in this study offers potential avenues for language preservation, even if these have not yet been fully realised.

5. Concluding Remarks

Incorporating visual cultural elements in scripts may help transfer cultural knowledge to more stable forms. Although visual cultural elements and the motivations behind script invention may not directly impact Unicode acceptance, they remain significant. Unicode encoding facilitates script use but does not guarantee the community will use that script indefinitely. However, incorporating visual cultural elements could help users remain connected to incorporated cultural aspects, potentially preserving them from vanishing. Understanding these motivations sheds light on the challenges faced by Indigenous language communities and their choices in script development, highlighting the importance of community connection to scripts.

Future research could further explore the use of visual cultural elements across various scripts. This kind of research can also be conducted on understudied ancient scripts, and the features of both ancient and modern scripts can be analysed alongside one another. By

doing so, we can gain a richer understanding of script development trends and innovations across different times and cultures, further emphasising the role of visual cultural elements in the preservation and revitalisation of languages.

This study on the visual cultural elements incorporated in script design and the motivations behind script development is not exhaustive, nor does it imply that these are the sole determinants for the success of a script. Linguistic, sociolinguistic, and socio-political factors all play crucial roles in script uptake. However, among these factors, the sociolinguistic situation is the most critical. Even with linguistic and socio-political stability, a script's acceptance ultimately relies on community acceptance. Therefore, language communities contemplating script development could consider implementing visual cultural elements relevant to their unique identities.

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I am a grapholinguist specialising in the study of endangered Indigenous languages and writing systems, with a focus on newly invented writing systems. My research delves into the intricate relationship between language, culture, and the written word, mainly focusing on the development and impact of writing systems on linguistic preservation and cultural identity.

I explore how the creation of writing systems facilitates the preservation of language and culture and how these elements can inform the design and evolution of writing systems themselves. Additionally, I investigate the sociolinguistic factors that influence the successful adoption of new writing systems within communities, including the intricate process of submitting proposals for Unicode encoding.

My passion lies in collaborating with Indigenous language communities, offering expertise and support as they navigate the adoption of a new script for their previously unwritten language or seek to replace an existing one. I am completing my doctoral studies in linguistics at Queen Mary University of London.

A New Era: *Visible Language Consortium*

Abstract

This is an announcement of changes in the editing and publishing model for this journal, *Visible Language*. We have established a consortium of institutions to ensure *Visible Languages'* independence and longevity. This takes effect January 1, 2025.

On 10 July, 2023, Editor-in-Chief Peter Lloyd and the entire editorial board resigned in protest from the design journal *Design Studies*. The journal's publisher Elsevier had insisted, among other things, that the journal exponentially increase the number of articles accepted each year. Like many journals, *Design Studies* works under a pay-to-publish model. An exponential increase in published articles would produce an exponential increase in revenue for the publisher. But since there was no evidence of an exponential increase in the number of quality design research manuscripts in the world, the result was likely to be an exponential reduction in quality.

Just as that unfortunate separation was unfolding, a mature author, researcher, and contributor to *Visible Language* asked us about getting immediate open access, required by their grant-funding agency, for a draft manuscript. This was yet another example of the increasing pressure *Visible Language* had been under to become open access. For some years our response had been to operate under a hybrid model where subscribers got access to articles immediately, with open access for everyone else following a 12 month embargo. This incident was just one in a string of similar incidents that indicated to us that our hybrid model was becoming untenable.

These two simultaneous events launched us on a thorough examination of scholarly publishing models and a reevaluation of our own publishing model. We did not like general the picture. The publishing world has moved to open access. But the open access movement has conspired with a variety of other pressures on scholarly publishing to produce a system whose trend is for authors to pay publication fees. This we oppose. It is perversely upside down for open access to produce a system where the only ones with access to distribution of their work are those with significant financial resources needed to cover publication fees (typically several thousand dollars). We were unwilling to participate in pay-to-publish. Neither were we willing to sell our financial and functional independence, which subscription support had provided for over 50 years, either to a large publisher or to total dependence on a single institutional benefactor. Even the highest-minded of public institutions are subject to social, cultural, and political pressures to compromise freedom of inquiry and this we were anxious not to submit ourselves to.

Disliking the current picture, *Visible Language's* editorial staff had applied for and received funding to conduct research studies to look at what design professionals, design scholars, and design researchers want from *Visible Language* in particular and design journals generally. The preliminary results of that study were reported in the December 2023 issue by D. J. Trischler. That funded research is ongoing. We believe it will positively impact how we publish but it does not specifically address high-level publishing models or sources of financial support. During the summer 2023 crisis we shared some of the ideas spurred by our research with peers at *Design Studies*, other leading design journals, and a few members of our advisory board. After that and considerable internal deliberation, we have identified a new publishing model for *Visible Language*.

First some historic facts about *Visible Language: The Journal of Visual Communication Research*.

- The oldest design journal
- Continuously published for 57 years – since 1967
- Owned by the University of Cincinnati School of Design and published by UCPress using OJS publishing system
- Minimum three 96-page issues per year
- 6×9" full color
- Existing business model: hybrid open access with paid subscriptions, all articles available online after a 12-month embargo
- Annual expenses: a little over \$10,000 per year (including printing and mailing)
- Current cash-on-hand sufficient for several years of operation.

That last point is to emphasize that while *Visible Language* is a not-for-profit journal, our subscription model has sustained the journal well with no end in sight. Financially, we have no need to change anything.

Reflecting upon all of the above, *Visible Language* has decided to become full open access but without any publication fees (or "diamond open access"). We will cover our costs and maintain our independence by forming a consortium of three peer institutions to jointly publish *Visible Language*. Thanks to publishing systems such as OJS our costs are low enough that each institution, by contributing a few thousand dollars annually, will sustain *Visible Language* without any sacrifice of independence.

Visible Language Consortium

In January 2024 *Visible Language* created a consortium of three academic institutions:

- North Carolina State University, College of Design, North Carolina, USA
- Leading PhD design school
- Heavily invested in research, faculty with significant funded research, technology oriented
- University of Leeds, School of Design, West Yorkshire, UK
- Leading PhD design school, large PhD program
- Heavily invested in research, faculty with significant funded research, information design and healthcare research oriented
- University of Cincinnati, Ullman School of Design, Cincinnati Ohio, USA
- Leading design school
- Heavily invested in professional practice.

This consortium will manage and publish *Visible Language*. Each institution has a functional seat for one of their faculty/leaders on the *Visible Language Executive Board* as an editor, as well as two additional seats on the *Visible Language Editorial Board* for associate and assistant editors. One of the three members of the executive board will serve a rotating three-year term as editor-in-chief. Everything about the journal and its possible extensions and activities will be governed by this 12 person board working under a three-institution collaborative agreement. The *Visible Language Editorial Board* will maintain complete editorial control of the journal, guide the journal's direction, review articles, plan issues, solicit contributions, etc. Each institution is publicly recognized as a member of the consortium and publisher of *Visible Language* with their logo/name on the journal cover and related materials.

While our consortium model may seem new, it builds upon a long history. *Philosophical Transactions of the Royal Society* (established 1665), widely viewed as the first "peer-reviewed" publication, was published by the Royal Society whose Fellows reviewed manuscript submissions. Fellows such as John Locke, Robert Boyle, and Isaac Newton represented various institutions: the Board of Trade [Locke]; Oxford University and the "Invisible College" [Boyle]; Trinity College [Newton]. While the wealthy gentleman scholar was the 17th century norm and is not a direct equivalent of professional tenured system of scholars at institutions

today, there are nevertheless clear parallels: a group of scholars from various organizations freely joining to manage a scholarly publication. Thus the *Visible Language Consortium* "stands on the shoulders of giants." Ours is but a revision of the original journal model.

We believe a consortium has several advantages over current publishing models. It makes the journal financially sustainable and intellectually independent, free from control of any individual funder or single special interest. It means that *Visible Language* will be free and open to everyone, readers as well as authors. The *Visible Language Consortium* ensures diversity of perspective within unity of purpose, broader than one institution in one region. It will promote publication of the widest variety of quality papers. It provides ample energy with different associate and assistant editors representing different research foci. It broadens access to alternate networks to enrich intellectual quality and rigor. It provides a continual pool of successors to become the next editor-in-chief. While the initial consortium is three institutions, it could grow to include research institutes and professional organizations, potentially strengthening the integration of theoretical and professional design knowledge. There are many other enticing possibilities we have just begun to discuss.

The *Visible Language Editorial Board* has been operating for most of 2024 and we have already experienced first-hand many of these advantages. Not only do "many hands make light work" but many minds come up with a plethora of great ideas driven by a load of energy. We will begin publishing *Visible Language* under the consortium model in January 2025 with a series of significant special issues exploring the past, present, and future of design research and practice. One theme that has emerged already is the necessary integration of research and practice. We are excited to not only report rigorous, relevant research, but also to make it visible and accessible to professionals while gleaning from them new areas that need research.

There are potential downsides inherent in any diverse body which will require wisdom, tact, and some skill to manage. Fortunately, we have independent publishing professionals at UCPress to help us navigate and operate. So far, it's been a dream.

Our Subscribers

For past subscribers, we will publish a printed anthology of 2025 *Visible Language* articles at the end of 2025. This will be a print document, in full color, of high design quality. It will include every *Visible Language* article from the volume in full, along with commentary provided by members of the editorial board. Past subscribers will get a discounted price for the 2025 edition as a thank-you for years of faithful support. We intend this book anthology to become a permanent feature of the journal and an additional source of support.

We're excited at this evolution of *Visible Language*. It comes shortly after *Visible Language* has been included in the Scopus index. This plus diamond open access are positive steps that will support further growth and quality of submissions. We think the consortium could become a model that others adapt to solve some of the problems that pervade scholarly publishing today.

We welcome any comments: mike.zender@uc.edu

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