

Language Dancing in a Maze: Ternary Logic, Language, and Mind-States in *Glide*

Deena Larsen

<http://www.deenalarsen.net>
textra@chisp.net

ABSTRACT

Electronic media provides an opportunity to create and explore languages not based on sound and words but on movement, vision, and meaning spaces. This paper examines how *Glide*[1], a visual/gestural language conveys complex cognitive perception processes.

KEYWORDS: Visual language, gestural language, word poetry, context poetry, new media writing, morphing, language experimentation, cognitive process.

INTRODUCTION

From Michael Joyce's rallying cry, "There is no simple way to say this" to Mez's encodings of `<slip.page[[ing]][language="meme.ment"><!-- in _][ad][Dressed in a Skin Code_`, writers are exploring new media's potential for expressing ideas beyond the bounds of conventional language.[2] New media provides animation and imagery, which can be used to create an entirely new language. Through an artificial language, we can better understand how language functions as a way to create thought, understand logic patterns, and develop mind sets.

GLIDE: A NEW MEDIA LANGUAGE

Diana Slattery developed *Glide*, a ternary visual language on which a novel (*The Maze Game*, 2003) and website: *Glide: An Interactive Visual Exploration of Language* `<http://www.academy.rpi.edu/glide/>` are based. The website offers music, philosophical and philological ruminations, an oracle, a collabyrinth to work with the glyphs. (In this paper, I will refer to the web work *Glide* in italics, and the language *Glide* in plain text. I will cite sections from *Glide* using the major section and page of the main site.)

Glide and *The Maze Game* posit a futuristic world where slaves have created a secret gestural language that can be expressed visually with glyphs. The language evolved into an intricate game/dance/maze that the culture revolves around. In the story, Death Dancers run through a game maze of glyphs, and "incorporate the layer of meaning of the glyphs"

(*Maze Game* p. 251). Language forms the playing field: dancers manipulate meaning in the game and losses,

which come when "meanings multiplied out of control." (*Glide*, story 3). Building poems and understanding the contextual meaning out of the many possible connections and meanings inherent in the glyphs becomes an art/sport form, where the stakes are life and death, as Dancers who lose perform a suicidal Dance of Death.

The Dancer students' meditation exercise asks "What does it mean to move in a maze of language?" (*Maze Game* p. 4). *Glide* is itself a maze of language: each glyph has multiple interpretations, and stringing the glyphs together increases the contextual interpretations. For example, one configuration of the maze is the *Glide Declaration of Independence*: a document that the Glides take two millennia to interpret. Characters send poems formed from the glyphs and study classical nine-glyph poems. These poems also encapsulate a myriad of meanings: figure 1 is variously translated as: "the lily's path changed the glide into a dance," or "the way of the lily: slip, sink, or die. The next section will examine the first glyph of this poem {up, semi, down: lily, know, intricate} in various contexts to show some of the potential for multiple meanings and interpretations.



Classical Glide poem on the origins of the language.

Figure 1: Glide poem (*Glide*, Visual Language 2)

LINGUISTICAL STRUCTURE OF GLIDE

Glide is a highly structured language based on a ternary system. Three possible radicals or lines make up glyphs: (upwards half circle, downwards half circle, semicircle). Three radicals in a vertical row-- top, middle, and bottom positions {1, 2, 3}-- form one glyph (figure 2). As paper space is too limited to show all the glyphs I want to discuss, I will refer to glyphs by their radicals (figure 2 becomes {up, semi, down}).



Figure 2: Glyph for {lily, know, intricate}

Glide cannot grow: adding another glyph to Glide would mean changing from a ternary infrastructure (three radicals placed in three positions) to another configuration by adding another radical or another position.[3] This creates a rigid boundary of 27 possible glyphs.

Each glyph has three core meanings assigned to it, which are tied to the overall glyph rather than the radical [4].

Clicking the upper triangle on

the pages in the main site yields a list of these glyphs at the top of the page, and scrolling along these glyphs reveals three core meanings. As languages are constrained in discrete instances (i.e., phoneme, gesture, symbol), each instance takes on more of the meaning, creating an environment rich in puns. This concentration of meaning reaches a poetic extreme in Glide.

These meanings connect in the mindset and history of the Glide world. For example, figure 2 has the three core meanings of {lily, know, intricate}. The lily in the story is a powerful hallucinogenic which Glides harvest and distill. In Visual Language (5), the Glides ascribe the origin of the language to the lily: "The lily explained that Glide would exercise their minds in making metaphor." Through assigning these meaning spaces, Glide can make connections between discrete ideas such as lilies and intricate. These connections form a crucial component in Glide's story and cognitive patterns. Encapsulating the story itself within the metaphoric meaning set opens an immense realm of possibilities for connection and expression in new media. No longer constrained to an English format, we can create and teach new languages and forms of expression using new media tools.

TEACHING AND INTERPRETING GLIDE

Glide uses an interactive browser to teach and interpret Glide. This animation and interactivity works much better than the static page of interpretations provided in the printed novel, as users can play and experiment with the combinations of glyphs.

The *Glide* site sets up a runic *Oracle* which allows users to ask questions and provide interpretations in English of Glide. This learning environment helps define the context of the meaning spaces within Glide.

Just as runestones invite multiple interpretations of the same image, the *Oracle* is enigmatic, reinforcing the multiplicity of potential meanings within a given context. The reader types in a question and the oracle presents three glyphs for the reader to arrange in a vertical order. The *Oracle* then shows other potential glyphs produced by this vertical order and provides the three core meanings for each of these glyphs. This vertical ordering becomes a word poem, the basis for subsequent interpretations and arrangements. The *Oracle* asks for readers to enter their interpretations. I conducted a quick "user study" and found that users were quickly able to understand that each glyph had three core meanings and to weave these meanings into an interpretation that fit their question.

Two major browsers within the *Oracle*, the *Situations* and the *Transformation* browsers, provide insights into the thought structure of the *Glide* world and the nature of the Glide language. The reader uses the question/ answer/ interpretation system to gain an understanding of the ineffable dimensions of these meaning spaces. The interpretation of Glide then becomes an exercise in thinking in three dimensions,

a combinatorial, conspiratorial form of poetry.

Situations

Vertical glyph pairs form the basis of most of the characters in *Glide*: from the nine characters that make up the nine sections of the work to the classical poem structure (figure 1) to the four characters that represent the four mind states in *Glide's* cognitive mapping (figure 4). In the *Situations* browser, readers form vertical pairs of glyphs from a top and bottom column. Figure 3 shows the vertical pair which forms the glyph for lily mind: six radicals {1 up, 2 semi, 3 down, 4 up, 5 down, 6 up}: which form the two main pairs of glyphs with the core meanings: {1 up, 2 semi, 3 down = **lily**, know, intricate} and {4 up, 5 down, 6 up = **mind**, discern, woven}.



Figure 3:
Vertical
pair for
lily-mind

The glyphs for lily and mind make up the vertical pair. Glyphs also occupy the {2, 3, 4} and the {3, 4, 5} positions. These internal glyphs are brought out as smaller glyphs on the side, clearly showing that these too are part of the implicit interpretive realm of the vertical pair: {2 semi, 3 down, 4 up = spirit, breathe, live} and {4 down, 5 up, 6 down = body, embody, rich}. Combining these glyphs yields a word poem fraught with possibilities:

lily, know, intricate
spirit, breathe, live
body, embody, rich
 mind, discern, woven

Situations draws a poem from the meaning context:

Lily mind
 Precarious Balance
 Mind, body, spirit--the
 trinity of the real (*Situations*)

Here the translation focuses on the physical meanings of mind, body, spirit and glosses over many of other potential meanings inherent in the other core interpretations. As *Glide* says, "Just as there are many branching paths through a maze, many readings of a constructive hypertext, there is no one "right" translation." (*Architecture*, 1). Indeed, the beauty of the *Glide* language is in its immense store of meaning potential. We could play off of the implications in other core meanings to construct entirely different Delphic transmissions. As

Glide wonders: "Even if the signs stand still, how can you translate a text that visually offers multiple paths for interpretation?" (*Architecture*, 2).

How can we translate this rich meaning space into our time and space of words and linear thinking? With multiple translations, creating a world where multi-linear thinking, including contradictory readings, is essential. *Situations* brings out multi-linear word poems, creating an "official poem" but asking readers to build their own poems, their own interpretations from the presented choices of core meanings in the vertical pairs' exterior and interior glyphs.

Transformations

The *Transformations* browser displays the 729 possible morphs from one of the 27 glyphs to another. The meaning here is inherent in the actual motion: we discover a fluid thought process of morphing between the two glyphs, a dancing state between the two static symbols of meaning. *Glide* renders this ternary thought process in three columns: two glyphs with their core meanings and the translation of this morphing. Transforming from the glyph {up, semi, down = lily, know, intricate} to the glyph {up, down, up = mind, discern, woven} yields this translation:

Tides of Thought
 Ideas wash through the
 mind, ebb and flow.
 Pebbles turned,
 smoothed, polished,
 ground to sand. (*Transformation*)

Again, this translation depends on the core meanings inherent in the two glyphs, but here the translation is more active and dynamic. *Glide* was originally a gestural language, and the morphing encapsulates the meaning of the motion and dancing to show the moving meaning state between two static states of concept. This becomes difficult to translate as each motion embodies a mind richness, of intricate weavings and discernings.

Using motion as part of the language itself provides a crucial third element to the thought structure of *Glide*. We are no longer constrained to here/not here, yes/no of a binary logic. A table in *Visual Language* (7) compares ternary and binary logic. *Glide* can transverse a continuum between zero and one rather than a binary on/off function, show a struggling human between the good and the bad; illuminate the process between state 1 and state 2. See *Glide*, *Visual Language* 6 – 10 for a further discussion on ternary logic. This ternary logic is embodied throughout *Glide*: within the essential three-ness shown in the language structure, the three core meaning spaces, and the three-ness of the cognitive

perceptive states {body, mind, spirit} discussed later.

form

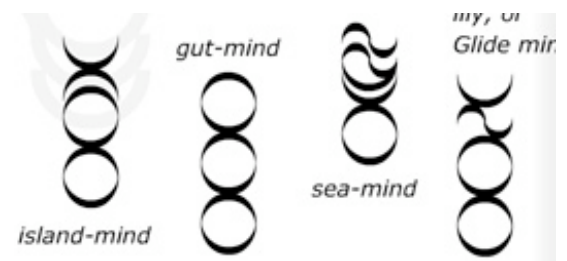


Figure 4: Vertical pairs for mind states (*Glide*, Architecture 1)

SECONDARY MEANINGS IN GLIDE

While the glyphs' three core meanings provide a rich source of language poetry, metaphoric allusions and connections, *Glide* presents yet another dimension for meaning interpretations in the glyphs through the *Lexicon*. Clicking on glyphs here shows the three core English meanings. Clicking on these reveals about four secondary English meanings, for about 15 meanings per glyph. In *Lexicon*, these glyphs and English meanings rotate and dance with the motions forming a language poem rife with metaphoric and connective possibilities. These words and glyphs dance to underscore the potential grounding and foregrounding of meaning in the visual language. The motion here is not one of morphing and negotiating between spaces as in the *Transformation* browser, but of occupying a three dimensional explication space. This three dimensionality is key in interpreting *Glide*--it provides the backdrop for combining glyphs into "meaning sets" with literally hundreds of potential interpretations [5]. The glyph {lily, know, intricate} becomes:

lily: origin, maze, language, blood

know: connect, meander, bind, recognize

intricate: lost, tangled, precious, filigreed

We see further evidence of the origins of these connections in *Glide* as the maze (where the game of thought is played out), language (where the meaning space occurs), and blood (death in the maze game) meander and connect in a tangled yet precious environment.

The lexicon isn't a binary operation: a thesaurus with synonyms and antonyms. It's a ternary logic--the lexicon expansions provide *Glide* interpretations as the motions of the words (focus and foregrounding) to build a third rail of process, negotiation, and connection to the underlying meaning spaces.

CONTEXTUAL MEANINGS IN GLIDE

Glide is used "as a poetic gestural language; as a secret code" (Architecture, 1). As a ceremonial language rather than a daily means of communication, *Glide* does not have to convey clear thoughts, such as "What do you want for tea?". Instead, the language serves to form an environment for increasing metaphoric, connective, and associative thinking. It lets us encapsulate poetry: identifying and pondering connections between meanings.

As languages which use the same sound for more than one word offer room to play with puns and double meanings, *Glide* uses the same glyph to stack meanings beyond 2-fold to a 15-fold meaning space. Meanings

language poems as readers explore the combinations of meanings to determine the connective points. Yet if this were an infinite meaning space, it would become "so derivative as to become unintelligible" [6].

Glide does not posit infinite meaning potential but embodies limits of meaning and association within a context. Meanings are evocative connections: between blood and precious, between filigreed and mazes. This is a confined arena. For example, we are not evoking moon or change here: only if we combined the glyph {lily, know, intricate} with the glyph for {moon, reflect, changeable} would we open up that new connective space and explore the metaphors in that new context.

TERNARY THOUGHT STRUCTURE IN GLIDE

Glide presents a cognitive model of three mind states: a ternary division of perspective, thought, and actions and a lily-mind: an overarching "transpersonal zone."

To illustrate the connective thought processes one can express in *Glide*, I will apply the meaning strategies from the lexicon to the four glyph pairs that represent the four potential mind states and types of players in *Glide*, shown in figure 4. The lower glyph of these mind state pairs is always the same: {up, down, up}, interpreted as {mind, discern, woven}. A lexicon translation yields:

mind: abyss, knife, net, thief

discern: steal, grasp, separate, seethe

woven: chaotic, sparkling, flowing, futile

The words define a context of limitations: a way of discerning what is there and weaving it into a chaotic, flowing, space, a seething abyss of futile grasping. It is a thieving knife: separating and netting minds. This is not a rational and well ordered system at work chunking out logic code (none of the core or secondary meanings evoke analysis, thought, or order typically associated with mind).

Above this seething mind-froth of sparkling chaos are four glyphs, each describing a mindset. In the *Maze Game*, these are four different types of Dancers, each with a different style of play. Here is a short explication for each type:

Island-mind (mind, rational, mechanical):

mountain: metal, monument, gravity, rock

solidify: heavy, limited, laughable, dead

real: master, verify, kill, prove

This has disturbing implications. The further meanings of real to verify and prove belong in the realm of the rational. To kill is equated with proving--perhaps the taxonomy and verification steals the life out of the specimen?

Gut-mind (body, physical):

rich: substantial, tasty, full

body: flesh, form, work, corpse, meat

embody: incarnate, manifest, reify, appear

This shows us more than mere gut feelings and reactions, it is the physical embodiment of the language, of an ideal thought process that reifies and appears manifest. Yet it is the realm of the flesh and corpse, ideas made incarnate.

Sea-mind (spirit, emotional):

sea: tide, grave, dream, song

wave: repeat, return, flow, surge

deep: relentless, soothing, profound, sinking

This thought process implies the depths of our emotions, welling from dreams and songs, repeating and returning relentlessly. Soothing yet profound, they sink and surge like tides, bound in grave images of graves.

The lily mind is the over mind, connecting and combining the three ways of thinking. Yet this is not a top down perspective. Rather as shown in interpretations in the previous section, the knowing is embedded in the maze, in meandering and in getting tangled in the language, in the blood. The key is recognizing patterns while traversing the maze, rather than overflying it.

Thus these glyphs present and explore three basic ways of perceiving and thinking with a connective thread throughout. These mindsets form the basis for characters and thought strategies in the story.

CONCLUSIONS

Glide the language is an integral part of *Glide* the website and *The Maze Game*; one cannot separate the thought pattern from the language structure. Glide has moved beyond expressing thought in a ternary grammar structure to embodying a ternary way of thinking with three mind perspectives and a metaphoric connective system. The essential ternary logic, language and mindsets become connected within the lily mind, which is responsible not only for creating the language, but for developing the maze and the ternary logic thought structure.

These explications do not employ all the meanings in the glyphs which make up the four mind states presented in *Glide*--to fully explore these connections would take up far more room than we have here. Yet *Glide* can say all of this--and more--quite simply.

While *Glide* is structurally tiny, the implications for interpretation, expression, and connection within *Glide* are immense. Vertical pairs inherently embody associations in internal glyphs made from the two parent glyphs: this associative visual structure cannot be readily translated into an aural language. Motion in the visual morphing and the maze dance provide another visual element of process and negotiation, of moving from one state of meaning to another. Primary and secondary meanings extend the connective contexts and metaphoric horizons of each glyph by itself and in combination with other glyphs. The mind states embody a range of perspectives to understand the language: from the analytical, physical, spiritual and overall viewpoints. To reply to Michael Joyce, "it's easier to say in *Glide*." (*Architecture* 8) [7].

NOTES:

[1] *Glide* is a collection of materials produced by Diana Reed Slattery, Robert Dunnie, Charles Mathis, and Bill Brubaker with the Academy of Electronic Media.

[2] Others are exploring visual, sound, and motion systems of language (e.g., Jim Rosenberg, Talan Memmott, John Cayley, and Jim Andrews). While none of these authors posit a new language and society based on that language,

Glide is part of an overall movement pushing the boundaries of expression.

[3] While glyphs can elide and thus appear to be less than three radicals (if a glyph shares a bottom radical with its vertical pair, then only one radical need appear), the doubled radical is apparent and can easily be pulled out of the structure, retaining the essential ternary structure. Figure 1 contains an elidation in the second glyph.

[4] As the *Glide* language embodies interpretive choice, this too is open to question. Most of the glyphs containing the semi radical, for example, imply some form of movement {semi, down, down} is fire, {semi, semi, down} is dance, {semi, semi, semi} is glide, maze, flowing. One can argue a cognitive relationship between radical and radical position. But this close reading would be for another paper. In *Glide*, the interpretive act arises on the glyph level and on combinations of glyphs.

[5] The *Lexicon* thus bridges English and *Glide* within a three dimensional space. Working in *Glide* is dancing in three dimensions: the opening screen for *Glide* shows a background of a maze, formed from three dimensional columns that form glyphs. In the maze game, glyphs are physical objects that can be manipulated. The

dancemaster can set parameters for mirrored spaces where the floor and ceiling reflect each other. These glyphs can be seen as paths, tunnels, slides, chutes, that combine. A game maze is "always 27 glyphs, but the randomness of the configuration, of wall height, of placement of the empty spaces made for very different games" (Story 11).

[6]Marianne Moore, Poetry, 1920.

[7] As this is easier to say in another language, what are the implications of a three-dimensional visual language on thought structure and creation for new media? How will artists use visual languages to develop other worlds, to relate connective tissues in new communication venues? I am looking forward to *Glide's* children, to the works that will explore these avenues further.

ACKNOWLEDGMENTS

Ideas for this paper developed with discussions with Rich Higgason and .in the HT02 Writing Workshop.

REFERENCES

1. Breeze Mary Anne (Mez). *ad*[Dressed in a Skin Code_ (2002)
<http://www.cddc.vt.edu/host/netwurker/> Access: January 15, 2003
2. Joyce, Michael. *Afternoon*. Eastgate Systems. (1987)
3. Moore, Marianne. "Poetry." The Complete Poems of Marianne Moore. (1961).
4. Slattery, Diana et. al. *Glide*. (2001)
<http://www.academy.rpi.edu/glide/> Access March 22, 2003.
5. Slattery, Diana. The Maze Game. Deep Listening Publications. (2003.)