Functionality

TBMIDlet, or Transborder midlet, presents the core code for the Transborder Immigrant Tool (TBT; figure 3.1). The primary function of this code is to extend the MIDlet class, or the basic object for MIDlet applications, with the methods and other attributes of the TBT, creating, of course, TBMIDlet. The `Main` call in another file will start this applet by creating an instance of this class. The code uses, among other libraries, the WalkingTools library, also created by Brett Stalbaum with Brazilian media scholar and artist Cicero I. da Silva, for a Global Positioning System (GPS). Because this project was begun before the advent of contemporary smartphones, Stalbaum had to create extensions to the GPX standard for associating media information (audio in this case) with GPS information. The TBT uses the GPS information to establish the walker's proximity to various waypoints, either a city or a water cache left in the desert by a volunteer organization. As the person gets closer to the water cache, the system vibrates more frequently. In the meantime, the app will play randomly selected audio files of recitations of poems, which contain information on how to survive in the desert. The traveler using the app has the opportunity to choose a target or destination. If the app detects that the traveler has stopped for too long, it will emit vibrations and audio alerts to try to motivate the traveler to move. The code also is designed to translate all messages into whatever languages are added to the system.

Figure 3.1
Demo image of the Transborder Immigrant Tool. Image by Brett Stalbaum. CC-BY-SA 4.0.

Origins of a Tool

One way of reading code involves simulating its operations in one's mind, tracing the effects of changing conditions on the state of the software as it executes. This means that reading code can involve a simulated execution of the software. As a result, code can present to its reader imaginary scenarios, which carry rhetorical and discursive meaning because they represent real-world scenarios and modeled worldviews. In this chapter, I offer a reading of some of the code of the Transborder Immigrant Tool, a hactivist art project, the code of which resituates the contemporary geopolitical border debate in potential scenarios of life-or-death survival. For readers of the code, as opposed to users who are engaging in these imaginary scenes, the code conveys its perspective the way a ritual does, offering passages of narrative movement to convey understanding.

The Transborder Immigrant Tool, or TBT, as it is known,[3] presents itself as a last-chance rescue application to sustain imperiled travelers, border crossers, by leading them to water and sustaining them with poetry. *Transborder* could (and does) refer to any border: political or otherwise. Yet the use of *border* and *immigrant* in a project emanating from San Diego, just north of the US-Mexico border, unmistakably engages with incendiary border politics that demonize the undocumented as "illegals" and "aliens," as an incursion of dangerous, job-stealing invaders, a threat to the nation-state. This artwork inverts that narrative by marshaling empathy for the border crosser who has already passed into the United States but who is about to die of thirst. Its tactic: drawing the audience into a ritualistic enactment of that perilous journey.[4] The work does not aestheticize the undocumented as avatars for first-world observers; instead, by reframing the journey in life-or-death terms, it helps to deny the rhetorical construction of transgressing "illegals" by recasting the travelers as immigrants with the most human of needs: water for their bodies and poetry for their souls.

The Transborder Immigrant Tool is a mobile phone application under development by the Electronic Disturbance Theater (figure 3.2), in residence at UC San Diego as the b.a.n.g. (bits, atoms, neurons, genes) lab.[5] When deployed, the app will help a traveler crossing the desert to the north of the US-Mexico border, presumably on foot, to find water by means of a simple compass navigation device and aural and haptic cues.[6] Once the device finds a water cache nearby, the tool begins its wayfinding process, leading the traveler, likely dehydrated and disoriented, to the nearby cache. These caches have been placed in the desert by volunteer organizations—specifically Water Stations, Inc., a humanitarian organization that works to fill brightly painted barrels labeled *agua* with gallon jugs of water (Marino 2011a).

Figure 3.2
The members of Electronic Disturbance Theater 2.0 (from left): Brett Stalbaum, Amy Sara Carroll, Ricardo Dominguez, Elle Mehrmand, and micha cárdenas.

The app uses GPS information from an inexpensive Motorola phone to find the traveler's location. Although this tool will not provide sustenance for an entire trip across the border, it does attempt to aid the traveler in what its developers refer to as the "last mile" of the journey.[7] The traveler activates the phone in their moment of extreme dehydration because the phone has only approximately an hour's worth of battery charge. After locating its own position, the phone searches for nearby water caches. It is important to note that as of the writing of this essay, TBT has not been used by undocumented immigrants dying in the desert but instead has been tested by EDT team and has been implemented rhetorically by fans and foes alike, for whom the mere mention of the tool stirs strong emotions.

However, the code does not exist merely for the functioning of the software. Released at the 2010 Critical Code Studies Conference at the University of Southern California, four years after the birth of critical code studies, the source code of the Transborder Immigrant Tool represents an example of code written to be interpreted by CCS scholars, or at least written by programmers who were aware of a potential critical and interpreting readership. In publications about the project, including a print book, the creators include the code side by side with the recited poems. In other words, this code was designed to be traversed as an instantiation or even execution of the project. Although fully functional, the code becomes meaningful in

its potential implementation, existing as what Jessica Pressman (pers. comm., June 14, 2007) has suggested could be called *conceptual code*. Unlike other code examples in this book, this code was written not only to be read by humans but also to be analyzed and interpreted.

Just as the poems help the traveler navigate the unforgiving climate of the desert, the complex terrain of the code requires a guide to navigate the dangerous landscape of the man-made methods and the interoperating systems of both hardware and software on which the code must operate. However, rather than merely draw an analogy between the comments and Carroll's survival poems, I would like to examine the code itself as another channel of poetry and poetic intervention—not because it resembles the structures of traditional verse, as is often the case in Perl poetry or many instances of codework, or poetry that plays upon the semantic structures and conventions of code, but rather because the code represents a text of semantic signs that when performed (either through human or machine reading) intervene in culture by creating a poetic disruption.

The project's poems in many ways teach readers the aesthetic conditions under which the code can also be poetry. Both poetry and code present scripts of performed instructions that act as channels of artful communication, intervening in overdetermined narratives of undocumented immigrants. Electronic Disturbance Theater presents its interventions as a kind of guerrilla theatre, including all who interact with the piece, even in protest, as part of the performance (Marino 2011b). However, rather than situating this poetry and code as theatrical scripts, I read this project through a metaphor embedded in its code: ritual. A *ritual* is a process that when enacted conveys valued cultural knowledge through participation. The human readers of the code experience the process, or participate, through their imagination, following a meaningfully contextualized procedure. Whether in code or poetry, these instructions for an imagined journey are embedded with cultural imagery, resonant with customs of affiliated cultures, and address a set of possible stories, or use cases, about a traveler who is about to perish while crossing the desert. To read the code, to trace its functioning as an imaginary border crosser is either sustained by water and poetry or perishes, is to engage with a counternarrative of the border that disrupts the popular rhetoric of pundits and politicians.

Poems Becoming Code

The TBT project grew out of the unique ensemble that makes Electronic Disturbance Theater. It began in 2007 as an application of EDT member Brett Stalbaum's

WalkingToolsGpx API, a library of tools for use in art projects involving GPS-navigated walks, often in rural or even dangerous areas. University of California, San Diego professor Ricardo Dominguez proposed to his EDT collaborator that they consider applying these tools to the US-Mexico border, and Transborder Tools for Immigrants (as the project was originally called) was born, though not before EDT applied for funding both to purchase phones and to develop a poetry component of the project to be written by EDT member Amy Sara Carroll.[8] As the project progressed, the collective developed all elements, including the poetry and code, in conversation with one another, according to Carroll (pers. interview, Skype, March 12, 2012). The group began the development in earnest, together with the other members of EDT: Elle Mehrmand and micha cárdenas, and a UCSD undergraduate, Jason Najarro, who over the summer of 2008 wrote the core code for the tool together with Stalbaum. Even while in development, the tool they have created has caused quite a disturbance.

TBT emerged at a time of heated and divisive debate about the US-Mexico border, a debate which long precedes this episode and which persists today. These were the days of Arizona's Senate Bill 1070, the Support Our Law Enforcement and Safe Neighborhoods Act, which gave law enforcement the authority to make "reasonable attempts to determine the immigration status" of any person they encountered, essentially authorizing the legal profiling of the undocumented. In that incendiary climate, within a few months of the publication of articles about TBT in 2009 in *Vice* magazine (Dunbar 2009) and then the geek culture link site Boing Boing, the University of California received a letter from Congressman Duncan Hunter and two others. Hunter "found the project to be a poor use of taxpayer money, particularly during a recession" (Miller 2010). As Fox News gave the story national coverage, the University of California began an audit of the project, while several other investigations began to pursue Dominguez. Between op-ed pieces and a featured spot on the *Glenn Beck Program*, the project grew in infamy, even as the production of the project was delayed, provoking violent emotions even before the app had ever been used (Morlan 2010).

The Transborder Immigrant Tool exemplifies Rita Raley's (2009) concept of "tactical media," the "critical rationale" of which is "disturbance" (19). She explains, "In its most expansive articulation, tactical media signifies the intervention and disruption of a dominant semiotic regime, the temporary creation of a situation in which signs, messages, and narratives are set into play and critical thinking becomes possible" (19). Raley posits tactical media as a response to "a shift in the nature of power, which has removed itself from the streets and become nomadic" (1), a notion inspired by the Critical Art Ensemble, one of the major creative influences of EDT of which Dominguez was a member.

Again, disruption is at the heart of these tactics. For example, by focusing the application not on the overcoded moment when the illegal immigrant crosses the border but on the moment the border crosser is dying in the desert, the project disrupts contemporary neoliberal narratives about the border. As Raley explains about another EDT project: "The aim is not to theorize liminality but to force a rupture in the binaries of interiority and exteriority, here and there, native and alien, friend and enemy. The radical dichotomies integral to the war on terror—'you're either with us or against us'—find their counterpart in art practices that themselves depend on the solidarity of the 'we' against the 'them.' A fence has been built, binaries constructed, and these artists intend to overturn them" (2009, 50).

This project overturns the border binary by rephrasing the question, What should be done about those national subjects who cross illegally? as, What should be done about those humans who have already crossed but are now about to die in the desert? In this way, the Transborder Immigrant Tool essentially leaps over the border fence and thus escapes the pageant that plays politics with the poor as it resettles in the realm of life and death and humanitarian aid. However, the app not only can lead a person to water, it also can deliver aid in the form of poetry. Here is another disruptive tactic of the Transborder Immigrant Tool, breaking the categorization of the app as a mere tool of physical survival just as it disrupts an image of the border crosser as a laborer for whom poetry would be at best a distraction. EDT's message is clear: this tool is an aesthetic object, resonating through artistic interventions even while providing for fundamental physical needs.

The poetry for the app was written by Carroll, though other members of Electronic Disturbance Theater have been contributing to the larger corpus of poetry that has been shared in other contexts, such as museum installations. Carroll (pers. interview, Skype, January 4, 2011) describes the poetry as very different from her other work but suited to the occasion, describing her process of developing it after reading piles of survival guides and the migration account of Luís Alberto Urrea in *The Devil's Highway* (ibid.): "I wrote pared-down prose poems, ideologically neutral (Is any writing 'ideologically neutral'?), procedural, if you will—a poem about locating the North Star, a poem about what to do if you are bitten by a rattlesnake or tarantula, poems that contained details about how to weather a sandstorm or a flash flood" (Electronic Disturbance Theater 2014, 4).

With the term *procedural*, Carroll begins to cue the reader on how to read the poems as instructions, or more specifically as code. Transgressing more borders, Carroll writes, "At base, I worked from two assumptions. A desert is not just a desert. And, poetry-becoming-code/code-becoming poetry could transubstantiate, translate into a

lifesaving technology, sounding off" (Electronic Disturbance Theater 2014, 4). In this work, poetry becomes code when it becomes instructions for procedures; code becomes poetry when it disrupts and resituates overdetermined signifiers, when it creates use cases of human suffering and assistance. The poetic and the procedural are inextricably connected at the border of instructions and reflections, between operations and meditations, between possibility and reality. Language becomes operational; functional code becomes rhetorical.

Carroll also situates these poems within the larger context of "conceptual writing," as laid out by Craig Dworkin, Vanessa Place, and Robert Fitterman. Dworkin identifies this genre, drawing upon the works of Kenneth Goldsmith, as *nonexpressive poetry*, akin to conceptual art, "in which the idea cannot be separated from the writing itself: in which the instance of writing is inextricably intertwined with the idea of Writing: the material practice of écriture" (Dworkin 2003). However, Carroll notes that this piece moves away from the aesthetic and formal focus of North American conceptual writing, toward the Latin American tradition, which embraces a more explicitly political mission. A full review of conceptual writing is beyond the scope of this book. By gesturing toward conceptual writing, Carroll situates the poetic in a realm that moves beyond surface characteristics, in which formal conceits and formalized procedures become central to how the writing is read—a genre in which the writing process and computational algorithm become much more compatible bedfellows.

This is not to say that Carroll has written code poems or codework. Following the subversive approach of the larger project, Carroll's poetry engages with the aesthetics of instructions, of survival knowledge, derived from folk wisdom more than the episteme of scientific knowledge epitomized by the mobile phone that delivers the app. Like the rest of the work, the strategy is to transgress all manner of borders, walls, and boundaries and the hierarchies and divisions they create and maintain. The poems themselves are individual meditations on some aspect of the desert, particularly the Anza-Borrego Desert in San Diego County, as each poem combines imagery of the desert with tips on survival in that trying terrain. Consider the following poem as an example: "The desert is an ecosystem with a logic of sustainability, of orientation, unique unto itself. For example, if the barrel cactus—known otherwise as the compass cactus—stockpiles moisture; it also affords direction. As clear as an arrow or a constellation, it leans south. Orient yourself by this mainstay or by flowering desert plants that, growing toward the sun, face south in the Northern Hemisphere." In the poem, the reader, or more properly the listener, will encounter information about the barrel cactus, which suggests how it can be used both for physical sustenance and direction. Other poems offer advice on how to cope with and manage exposure to the

sun, dehydration, and desert snakes while conserving energy in the extreme heat. The nature of these poems reframes the tool within a larger tradition of sharing knowledge of survival through folklore and rituals, knowledge in the form of instructions for procedures.

The first characteristic the poems share with folk wisdom is their instructions. Though situated as poetry, these passages appear as practical instructions, survival guides, embellished with poetic flourish. Folklorist Tok Thompson (pers. interview, September 12, 2011) offers the parallel of "leaves of three, let it be" as a sign of the poetry of folk wisdom. I am using *folklore* here to designate communal, shared knowledge, as opposed to the kind of formalized knowledge taught in schools or patented and commodified by corporate or private entities, though folklore has also been commodified by corporate entities. Communicating folklore, these poems convey knowledge of the land, its dangers, its hopeful sustenance, and knowledge derived from the land, delivered in a deceptively plain-spoken style. These instructional poems thus evoke forms of artistry that transmit communal knowledge, like folktales or aphorisms, memorable for their images and formulations yet crucial for their practical information. They deliver poetic imagery with the rhetorical and aesthetic formulation of instruction.

Reading the poetry as instructions with deep communal ties, or instructions that lead into the folk, situates the poems as the mirror image of the code, a set of instructions that also bears the deep imprint of cultural practice. Or rather, if poetry seemed an unlikely place to find practical instruction, code strikes many as an odd place to find culture. However, as the poetry takes up these practical formulations, it outlines the nature of a kind of folklore, how the practical instructions bear the communal practice and wisdom. The program is literally the codification of the folk knowledge as procedure and objects, threads and events.

Second, the poems are performed. They are read aloud (in multiple languages) through recordings on the phone.[9] Although the text I quote in this paper has been copied from a digital text file shared with me by Carroll, those travelers who encounter the poems will hear them played through the phone at a random moment while using the tool. Context, even an imagined or speculative context, is critical. The poems have been recorded by cárdenas, Merhmand, and others and stored as WAV files to be played on the mobile phones as part of a portion of a set of use cases. The poems that play are not part of a collection, an anthology, to be perused or thumbed through, but part of this specific process. However, the poetry is never disconnected from that potential process. That process is not merely accessible to the person who is dying in the desert but is also accessible to anyone who traces her way through the code (or code

repository), either using the machinery of the phone (or the software equivalent) or by reading through the code. The poetry then offers knowledge situated in a performance that is part of a process.

But the poetry itself also suggests folk ritual, as it offers knowledge or advice that has been embroidered with rich semantic inflections. Consider again the poem about the barrel cactus. The simplest version of its contents is "the barrel compass stores water and points south." However, Carroll frames this information within the metaphor of "an ecosystem with a logic of sustainability, of orientation." Of course, the phrase "logic ... of orientation" speaks both to the poetry and to the tool itself, which now by extension is grounded in the deeper nature of the desert. Evoking the basic compass wheel interface of the tool itself, Carroll refers to the barrel cactus by its alternate name, *compass cactus*. Abruptly, the sentence switches its frame with the metaphor of *stockpiles*, an industrial term more often used not in survival but in accumulations of destructive materials. And again, she shifts registers with *affords*, a term with deep resonance in the realms of tool design and programming. The end of the poem entangles or emplaces the tips for survival knowledge into the larger realm of geography and contested borders, as the piece encourages the traveler to orient himself or herself by facing "south in the Northern Hemisphere," which at once evokes a sense of human divisions of the land in the context of a worldview into which nation-states and what Dominguez calls "the aesthetic fiction of the border" dissolve (UCSBLitCultureMedia 2010b). Carroll's seemingly plain-spoken directions call forth the conflicts of worldviews, pulling on metaphors from production, war, and design while reorientating the reader toward land and country.

It is perhaps only in the realm of science that we entertain a notion of cultural knowledge devoid of cultural dispositions. Without rehearsing the entire epistemes of Foucault, it is worth noting that scientific knowledge is culturally situated and constructed and that the long shadow of worldviews colors or frames all descriptions of empirical phenomena. The genre of "directions" or "instructions" becomes emblematic of knowledge that has been systematized, seemingly stripped of unnecessary verbal trappings, especially when what is being described is a naturally occurring process. It is easy to conceive of computer source code in this context: a series of instructions (although not everything is an instruction) devoid of cultural inflection: pure process.

Carroll's poetic instruction in the Transborder Immigrant Tool, however, suggests ways in which instructions become more than mere directions. Her poems draw to the forefront the extent to which knowledge, even knowledge of survival, when communicated is by necessity situated in other kinds of cultural frames of reference—that

knowledge is always cultural knowledge and instructions are always something more. Her work calls to mind other forms of practice that more obviously mix instruction with story, with song, with art.

She evokes these other forms through allusions, direct and indirect, to these other stores of knowledge, as the poems meditate on the landscape of the desert, reading it for its evocations and its indications of how to survive. Consider Poem 15, Arborescent monocot:

> Arborescent monocot. "Mothers of the Disappeared." "I Still Haven't Found What I'm Looking For." "Bullet the Blue Sky": "Put El Salvador through an amplifier." Seldom free-standing (Mexican as the Irish in the United States), the Joshua tree sends out yellow-green flowers—like flares—in the spring. Mormons referred to the trees—actually shrubs—as "praying plants." Anthropomorphizing each's branches, they compared the largest of the yucca evergreens to the Old Testament prophet Joshua as he pointed toward the promised land. Use the Joshua tree's lightweight wood to splint broken limbs. Chew the plant's roots for the steroid-like compound released (in cases of allergic reaction or swelling).

Carroll's poem on the Joshua tree quickly moves into song titles from the Irish rock band U2, whose album *The Joshua Tree* broke sales records in the late 1980s and delivered soulful ballads and anthems to that generation. In fact, after the scientific name of the Joshua tree, Carroll includes other voices in the form of their song titles uninterrupted: "Mothers of the Disappeared," "I Still Haven't Found What I'm Looking For," and "Bullet the Blue Sky." The final quotation, "Put El Salvador through an amplifier," is Bono's instructions to guitarist the Edge (Wharton 1998) that no doubt leads to the Latino-Irish connection, "Mexican as the Irish in the United States." By linking this poetic project with the Irish rock band's iconic album, Carroll aligns the project with its brand of social and political commentary. The commentary that follows seems to mix the scientific description with the historical commentary, tying the plant to the Biblical prophet. A final voice, however, delivers practical advice on how to use the plant to survive ("Chew the plant's root"), a necessary and common strain throughout the poems.

Yet Carroll claims that the code of the tool is the poetry of the project. To some, such a claim might be more disturbing than anything else called forth by the project, and yet given the context of conceptual writing, the code, as a manifestation of the logic and loglines of the art project, becomes poetry not just through that very framing but also by the very instructional nature of the poems it delivers.

Code Becoming Poetry

To read the poetry of TBT is to imagine a traveler in an hour of need receiving just-in-time guidance and sustenance. To read through the code of the Transborder Immigrant Tool is to stage a ritual in which mythical travelers cross the desert through the software. On the surface of the comparison, these traversals seem inconsonant: one involves physical movement and the other an act of the imagination of execution. I would argue that because the act of reading code requires models of materially tied processes—models, even black-boxed models, of the effects of the executed translation of the code on software and hardware—it is not necessary for someone to be physically moving to be enacting this journey.

The code of the Transborder Immigrant Tool is set to function in a particular set of use cases of a traveler lost in the desert in desperate straits. To read the code is to implement the code, to imagine the realization of that code, the software produced by it, and consequently the desert and the desert traveler, as well as the water to which the software leads. To read the code is to enact the ritual of the code, which carries with it communal knowledge and a communal history. Such an enactment is not meant to trivialize or aestheticize the real lives of those who could benefit from using the tool but instead to meditate not on their political representations but rather on their (potential) lived conditions by tracing through a procedure designed to rescue them.

Code is routinely conceptualized as *abstracted procedure*. However, I am setting that conventional term aside for a more culturally situated formulation. *Procedure* calls to mind a series of steps aimed at a goal; *ritual* is a performance aimed at cultural connectivity, at instilling community, of signifying allegiance, of remembering. The code, like the text of the oral performance, is more of a transcript of a performance to be realized in the mind, either by the mind of the reader or by the processes of the computer. It bears signs of its performance, as well as its history. Which is not to say that code does not have an end in mind. The Transborder Immigrant Tool does produce the app and govern the interactive experience of the app. I am focusing rather on the human reading of the code. Thus, I would argue that to engage with the Transborder Immigrant Tool through the code is to engage in a ritualistic imaginary performance of the software, a speculative deployment, an engagement that has many parallels with folk practice of ritual, song, and tale.

The act of reading code then involves a willful attempt to process like the computer, to emulate the system that will be operated on by the performative, automatic triggers of the code. The notion of literacy, therefore, in the sense of reading literacy, is