

Deliberating the Future (of Driving):
Productive Speculation and the Practice of Framing

by

Christina J. Santana

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Graduate Supervisory Committee:

Elenore Long, Chair
Keith Miller
Mark Hannah

ARIZONA STATE UNIVERSITY

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ABSTRACT

My dissertation is situated in the speculative—that rhetorical domain of human affairs concerned with conditions we cannot entirely predict or control. Specifically, my research investigates the polarization and unease many of us feel as we imagine a world in which humans are no longer in the driver’s seat. It offers a literate practice of framing to facilitate substantive talk about the possible effects of the impending technology. To pursue this line of inquiry, I draw from Kenneth Burke’s frames of acceptance and rejection. In particular, I developed a computer-based tool and tested the prototype in a pilot project. The study is designed to assess the technai (rhetorical problem-solving tools that transform limits and barriers into possibilities) I fashioned from Burke’s six frames of acceptance and rejection to prompt participants to articulate epic, tragic, comedic, elegiac, satirical and burlesque driving futures. Findings from the study reveal that the practice of framing helps scaffold participants’ thinking beyond the good/bad binary and toward more realistically complex understandings and expectations of the future of driving. For example, one student commented that “the frames guided discussion and added a well-rounded perspective that we individuals may not have otherwise taken into consideration.” Ultimately, this study demonstrates the power of effectively designed deliberative experiences. Technai teach useful practices to teachers, students, scholars – all of whom need opportunities to critically assess the risks and rewards of our technology-laden lives. This research pushes our scholarship to focus on rhetorics that surround speculative public scientific controversies like the driverless car, in order to advocate for our individual and collective well-being.

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CHAPTER 1

INTRODUCTION: FRAMING THE STUDY

The Future of Driving and Rhetorical Studies

On April 20, 2013, *The Economist* ran a special report on the future of the car. That issue's front cover featured a couple riding in the backseat of a 1950s era convertible, one person sleeping and the other reading from a tablet. The optimistic title, "Clean, Safe and it Drives Itself," introduced the ten subject headings found within the magazine with a clear message: driverless car technology is coming, and coming soon, Google and the big auto manufacturers (Mercedes, Toyota and Audi) promise. For me, this issue conveyed an unparalleled reach of technology on our collective future movements. But I was unconvinced that I or anyone else should share *The Economist's* happy position. I began to wonder how social inquiry could help me and others contend with the unease many of us feel as we adjust to a world where cars drive themselves and traditional drivers are left to reposition themselves behind or apart from the wheel. I decided to look into it.

To start my own inquiry, I skimmed online blogs and web news sites and broached the subject with colleagues, friends and family. This informal exploration led me to recognize online reader comments (written in response to news articles about the future of driving) as a window into ways ordinary people assess and manage potential and perceived risks associated with the future of driving. I collected data then, a corpus of online reader comments that might show the contours of everyday discourse about the

future of driving.¹ Although findings from that study are outside the scope of this dissertation, the work allowed me to read and become familiar with the attitudes of ordinary people, and I recognized two distinct camps: those who welcome driverless cars and their promise to alleviate traffic problems, increase fuel efficiency and safety for all drivers, and put technological innovations to practical use; and those who don't want "to let go of the steering wheel" (Newcomb). Missing from the online reader comments I gathered from my corpus study, or the informal conversations I initiated in my everyday life, were hallmarks of knowledge-building quality deliberation. That is, while there is some evidence of engaged discussion between participants trying to understand one another while "respecting basic principles such as pluralism and tolerance"² (Ruiz et al. 4), the kind of deliberation commended by community literacy proponents (Flower *Intercultural*; Higgins, Long and Flower), which enables conversation partners to co-construct more realistically complex understandings of their own interests and shared concerns, is nowhere to be found (Hauser 53-54). This may be unsurprising considering that Richard Young, Alton Becker and Kenneth Pike first explained in 1970 that "[o]ne of the enduring difficulties of building new knowledge is the need to seek difference, to tolerate dissonance, and to embrace the generative possibilities of conflicting ideas and competing realities within the process of inquiry" (qtd. in Flower 239). That is, while conversing online may be informative, ordinary people still need help to seek out and

¹ See "Modals in Discourse about the Future of Driving: Exploring the Online Reader Comment Space" by Santana, LaBarge and Adams in progress.

² Their study found that news sites like the *New York Times* and Guardian.co.uk have online reader comment spaces that are "apart from the dynamics of other newspapers" (17). Participants engage in high quality conversations (i.e. "Different opinions are welcome and mostly respected, and contributors try to support their views with arguments"; and "debates are on topic and well argued, with a wider range of opinions than in most of the other news websites" (16, 17).

make use of “conflicting representations of reality” (239). In the case of driverless cars— what makes it such an interesting case to study— most representations of the future of driving are conjecture (in large part), and therefore demonstrate a wide spectrum of possibilities and perspectives, but go nowhere. Certainly ordinary people need to build knowledge in and around such speculative topics or phenomena if they hope to weigh in on and help shape the future well-being of our communities. For me, this problem of how we might participate in informed speculation caused me to wonder how I might structure inquiry to support careful deliberation that does more than “express the frustrations of citizens” or engender “dialogues of the deaf” (Ruiz et al. 18, 20). I wondered how inquiry might instead enable ordinary people to engage in “substantive dialogue” for the purpose of building knowledge in and around the speculative—with the potential to affect how everyday people come to reason about future uncertainties (Higgins, Long and Flower 19).

This line of inquiry, discovered in part through valuing online reader comments, ultimately led me to try my hand at designing and testing a new literate practice that fosters speculative thinking by allowing participants to name, describe and test their understandings of a phenomenon (like driverless cars) even when most representations of that understanding are in large part conjecture. Before I get into that, however, I review a series of scholarly conversations that establish themes from which my study emerges and outline this introduction:

- 1) The discourse around the future of driving is relevant to rhetorical studies.
- 2) Public conversations are indicative of how people in public spaces communicate about potential and perceived risks.
- 3) Rhetoricians can deliberately mediate conversations germane to the future of driving so that they become sites for knowledge building

These claims situate this study at an important crossroad in contemporary rhetorical studies.

The Discourse around the Future of Driving is Relevant to Rhetorical Studies.

Little attention has been paid to cars, let alone to the future of driving as a rhetorical phenomenon. One exception comes in Thomas Rickert's *Ambient Rhetoric*, which asks readers to think more deeply about cars as key components of our everyday environments:

[A]utomobiles... are not just thoroughly integrated into our way of life...[;] In addition, they constitute key actants in our processes of building, relating and valuing. As key actants they are integral to all aspects of contemporary life, including infrastructure, climate, environment, spatial development, urban growth and layout, networks of logistics and transportation, and so on, as far as we can go. (Rickert 246)

By directing our attention to ways that cars are positioned in the backgrounds of our everyday lives, Rickert helps us begin to understand why rhetorical scholars may have not taken much notice of the changing dynamics of our roadways. Opportunities for notice are plentiful, however, as advertisements for new car “upgrades” seem to appear in a steady stream – on television, on billboards, and in the shiny new model in the next lane. Conveniences like key-less entry, push-button start, and rear-vision cameras show carmakers working in a steady stream to provide customers with products, luxuries, and

opportunities to turn over some responsibility to technological systems. It is through rhetorics of “upgrades” that local publics³ are acclimated to the realities of the future of driving – realities proven to be possible given outcomes of competitions funded by the Defense Advanced Research Projects Agency (DARPA).⁴ Certainly a future where “upgrades” evolve into fully automated vehicles may be on the horizon, and as we move steadily toward it, we can foreground, as Rickert asks us to, ways this eventuality is and will continue to *act* in “all aspects of contemporary life” (246).

Rhetorical and technological artifacts, like persuasively powerful cars, “push and pull at us” as Carolyn R. Miller explains in the forward of Stuart Selber’s *Rhetorics and Technologies* (xi). This “push” is realized in the steady supply of discoveries that both allow and require that we change what we expect from our cars (i.e. that rear-view cameras will help us avoid rear collisions). The “push” is realized in the “market demand” for shiny, new and more “equipped” cars, which form needs where they may not have been any before (ix). This “push and pull dynamic” turns us on to the “twin

³ Notions of “public” have been expanded since Jürgen Habermas first characterized a singular and rational public sphere. Scholars like Nancy Fraser, Michael Warner and Gerard Hauser have shifted our attention away from a single, highly rational public to recognize the co-existence of competing publics and the diversity inherent in the discourse of everyday people as they comment on public issues, a phenomenon Hauser refers to as vernacular publics. That is, it more accurate to describe multiple publics and their relationship to one another (strong and weak or publics and counterpublics) than a single “public.”

⁴ Driverless cars are possible, as Alex Wright explains, due to “advanced sensors and onboard computers equipped with increasingly sophisticated algorithms” first developed, tried and tested in competitions funded by the Defense Advanced Research Projects Agency (DARPA), the prominent research organization of the United States Department of Defense (Roebuck 20; Wright 16). The agency ran three competitions from 2004-2007, enticing teams from all over the country to explore autonomous car possibilities. In its final year, the competition inspired a team to design a Chevy Tahoe named “Boss” that navigated traffic, avoided other vehicles, and arrived at the finish line twenty minutes faster than the second place finisher, averaging about 14 miles per hour (Roebuck). This outcome appears to have satisfied DARPA’s interest in these competitions, and has clearly inspired companies such as Google and Audi to bridge the gap between discrete consumer conveniences and entirely new visions of what cars can do for their human owners. In fact, the levels proceeding “driverless” cars fall along a continuum of progressively higher levels of automation. “No-Automation (Level 0),” “Function-specific Automation (Level 1),” “Combined Function Automation (Level 2),” “Limited Self-Driving Automation (Level 3),” and “Full Self-Driving Automation (Level 4)” (NHTSA). Of these, the first and the last level may be the most familiar.

dangers” that rhetoric and technology share, which “consist partly in ruling and partly in following” (Gersten 2 qtd in Miller x). These dangers accompany the efforts of “balancing *innovation* with *tradition*, of *initiating change* and then *compensating for it*” (*emphasis mine*, x). That is, as we imagine a world full of innovative driverless cars and what they might provide in terms of safety and free time, even simply, we must also keep in mind that there is much tradition that may need to be sacrificed in terms of freedom of movement or privacy. This is a rich site for studying how contemporary publics may deliberate together (initiating change) about technology’s reach on the uncertain future we will share together (compensating for it). Considering all that will be touched (i.e. what Rickert mentions) the future of driving demands rhetorical attention.

For example, the future of driving may entail a turn toward hyperpragmatism—a power/knowledge system that operates invisibly and “privileges utilitarian efficiency and effectiveness, including rhetorical effectiveness, at the expense of sustained reflection, critique, or ethical action” (Blake, Longo, and Wills 9). We can see its potential if we look closely at the way regulatory rhetorics of licensing “push” us to see driving as functional – setting the stage for a future of driving that is increasingly void of human drivers. Written tests correspond to state driving regulations, which assert certainty in judgment, presupposing that potential drivers interpret each state issued handbook unfeelingly, by decontextualizing the driving scenarios presented – signaling that driving should be conceived and performed in one particular way. However, these tests boast high failure rates, up to 50% in some areas (AZ DMV), and a recent study found that “nearly 1 in 5 drivers—or about 38 million Americans—could not pass a written drivers test if they took it today” (Rhine). Considering this data, it is clear that some test takers

need time to adjust to the hyperpragmatic state of mind required to become and stay licensed. As of yet, the four levels of automation provided by the NHTSB show the discrete steps of technological change inherent in a future of driving. This means initially *shifting* control and authority over to the car's sophisticated systems and ultimately *surrendering* control and authority, rendering the work of "sustained reflection, critique or ethical action" moot. Drivers will be forced (happily or unhappily) to put their faith in and dependence on the car's sophisticated systems such that driving can be conceived and performed the particular way the government mandates.

Other rhetorical frameworks that can shed light on the rhetorical dynamics inherent in the future of driving include transportation and mobility writ large; as Ehren Pflugfelder says, "rhetoric is very well suited to address mobility concerns in part because movement in the world – as enacted by the coordination of people and technologies – is argument" (9). Along these lines, tracing the dynamics between cars and drivers can lead us to posthuman studies (Haraway; Hayles; Latour; MacKenzie), which account for ways that drivers or "humanity" is "always immersed within deep and wide constellations of technologies" (i.e. people can at times come to feel "one with their car") (Pflugfelder 65). Also, rhetorics of technology help illuminate the underlying interests behind automated driving; such rhetorics may conceive "technology" as "a coercive cultural force" that propagates hegemonic structures" (Menchaca 8). Finally, these rhetorics can help tease out factors operating within networks or "'cultural ecolog[ies]' of automobility: progress, privacy, identity, democratic mobility, autonomy," rhetorics that reveal ongoing relationships instantiated in diverse realities, which will affect the everyday lives of ordinary people (Dube 6).

Public Conversations are Indicative of How People in Public Spaces Communicate about Potential and Perceived Risks.

As everyday people begin to address the impact of increasing driving technology on their lives, it becomes important to consider how ordinary people might “rationalize their lifeworld” in the face of change (Crick and Gabriel 209). Doubt, or the recognition of uncertainty, signals an important shift that can spur individuals to take sides and stir controversy—so argue Nathan Crick and Joseph Gabriel in “The Conduit between Lifeworld and System: Habermas and the Rhetoric of Public Scientific Controversies.” As they explain, “No matter how many sensational articles appear in popular magazines about [a public scientific debate], doubt does not really arise until situational conditions change to such a degree that habitual behavior is disrupted and needs and desires are thwarted” (209). What this means in the case of the future of driving is that people may remain content to accept or reject the nature of driving technology until an ethical or political exigency like seeing a self-driving car in the next lane disrupts “habitual [driving] behavior” and causes a “decoupling” of the system (economic and administrative structures) from the “lifeworld” (209; Habermas *Knowledge* 120). This “decoupling” would represent the interplay of optimism and pessimism where lifeworld members – “those who share similar ideas about what should shape common life” – are compelled to both protect what had “go[ne] on largely unchecked and unchallenged,” and to anticipate future behavior—in this case normal driving behavior (Habermas *Theory* 131). As G. Thomas Goodnight via Crick and Gabriel explains, “the vibrancy and health of political culture in democratic societies increasingly depends on the publicity and resolution of public scientific controversies” (203-204).

What compels people to participate in public life? That their lifeworlds—the internal logics that hold their day-to-day lives together—have been disturbed. Such disruption can spur people to shift their attention away from their private lives to discuss issues regarding the shared common good. According to Jürgen Habermas’s seminal text, *The Structural Transformation of the Public Sphere*, the public sphere provides a place where the colonization of the “lifeworld” by “systems” steered by administrative power (such as state bureaucracies) or by money (such as multinational corporations) can be resisted. Critiques of Habermas’s descriptive accounts reveal that he idealized flawed public discourse, ignored limitations and exclusions, and failed to account for the co-existence of diverse, vernacular and competing publics (Calhoun, Hauser, Warner). Nowadays, public conversations—diverse, competing and vernacular—can potentially erupt almost anywhere, including online. As Victoria Farrar-Myers and Justin Vaughn explain, “In a real sense, speech found in comment forums represents one of the most democratic public spaces in our society, one that is not filtered by the media or pollsters and where there is broad and relatively uncensored access both for consuming and disseminating political information” (221). While these online public spaces invite and even operate upon principles of democracy (i.e. equality, fairness, and attention to the public good) (Ruiz et al. 4), they detrimentally rely on “good will or happenstance” to support substantive dialogue (Long, “Prometheus” 201). Certainly, online public spaces should be valued for their ability to “foster political debate and citizen participation... and act as an extension of the public sphere” (Ruiz et al. 4; cf. Dahlberg 2001), but research indicates these usually aren’t spaces where as participants are engaged in the harder,

deliberative work of building more “realistically complex understandings of issues of shared concern” (Higgins, Long, and Flower 27).

Quality public deliberation is important when it comes to participants perceiving and assessing the nature of change and its effect on every day and future driving – as a “recoupling” of a system to a lifeworld. Because ordinary people cannot (or may not be inclined to) drive to their local community center to attend a physical forum to listen and learn from “experts” about “official” risks they might expect concerning the future (of driving), they might instead read online newspapers and seize the opportunity to comment when permitted – to express opinions, argue or learn. After all, “the Pew Research Center reports that 21% of American adults who use the Internet have commented on an online news story or blog post to express an opinion specifically about a political or social issue” (Smith 19 qtd. in Farrar-Myers and Vaughn 221). Unlike physical forums where “ordinary people are often inhibited from participating in decisions that affect their lives because they lack the ‘technical expertise, authority...and status’” (I. Young 56-57), the online comment space is more inclusive of public participation as mentioned above. There, people can read and comment about perceived risks and potential affordances of driverless cars. For example, on Wednesday, March 17, 2015, Tesla CEO Elon Musk asserted a vision of the future of driving during a press conference that was void of human drivers; he went so far as to say that human drivers will be illegal. His comments set in motion a great variety of responses both accepting and rejecting the potential future, but also generating a fuller representation of what current states’ driverless cars might threaten: the enjoyment of driving, privacy and freedom of movement, current transportation networks and jobs. Though this online

invention work is “messy” and “non-linear” as online discursive spaces tend to be (Grabill and Pigg 99), online comments do provide a space for non-experts to invent in ways that are comfortable. As Jeffery Grabill and Sarah Pigg found: “We all engage public issues more frequently and perhaps more passionately via spaces that are not explicitly understood as deliberative forums” (100). In short, online discursive spaces should be considered as Wikipedia is – somewhere to start.

Although public conversations are indicative of how people in public space communicate about potential and perceived risks, risk-communication scholarship points to legitimate uses of intervention (distributing cognition,⁵ problematizing expertise,⁶ and devising and circulating influence diagrams⁷) to compensate for the partialities of public

⁵ Simmons and Grabill’s model of distributed cognition, as detailed in “Toward a Civic Rhetoric for Technologically and Scientifically Complex Places: Invention, Performance, and Participation” shows how a group of non-experts are able to explore their own questions and develop new knowledge in the face of a complex local issue. Structured invention practices, comprised of six steps, distribute the work, scaffold professional performance and bolster new knowledge invention: 1) At meetings, members are asked if they have knowledge or leads about the issue of concern. 2) Members read all relevant public documents about the issue of concern. 3) Members read widely in newspapers, magazines, and select scientific journals (e.g., *Nature*) for relevant articles. 4) Members write to experts cited in publications to ask follow-up questions or to ask these experts new questions based on the local situation. 5) Members report back at meetings about what has been discovered (and then return to searching and reading strategies). 6) Members write issue summaries for distribution to the wider community.” (435)

⁶ Beverly Sauer problematizes expertise in her book, the *Rhetoric of Risk*, to explore the technical documentation practices of coal mining and ways hazards are assessed and prevented. By exposing the rhetorical nature of judgments made in high-risk environments, Sauer argues that multiple viewpoints (miners, engineers, managers, etc.) are essential to the project of managing risk; In these environments, having access to more than one viewpoint – the viewpoints of both unions and inspectors, for example, or the systems approach of an engineer—may provide decision makers with a greater range of problem-solving strategies than any single representation from a single viewpoint” (227). Sauer demonstrates this in a series of interviews where speakers use “mimetic and analytic viewpoints as building blocks to construct representations that integrate more than one viewpoint simultaneously and sequentially” (230). The “analytic and mimetic gestures” speakers make during these interviews, “help them organize, dramatize, reflect upon, and understand the nature of their work” (257), and missing viewpoints “call attention to larger problems of representation or absences in a speaker’s understanding of risk” (228).

⁷ Morgan et al.’s influence diagrams demonstrate the collective dimensions of expert knowledge. They can provide a thorough understanding of any given issue. Influence diagrams model expertise or “pool in a systematic manner, everything known, or believed, by the community of experts that is relevant for the risk decisions the audience faces” (23). These visual representations “elicit what audiences know and how they structure their understanding of complex issues” (Sauer 14), and they are generated through surveys and interviews with expert groups and audience members.

talk. That is, years from now when the future of automated driving is no longer the future, but the present, and ordinary people can attend physical forums in order to decide for themselves what the most important questions are and participate in decisions that will “affect their lives” (I. Young 56-57), they will most likely encounter “indirect exclusions” (Simmons and Grabill 420). These “indirect exclusions” tend to severely limit inclusive public involvement because they “function tacitly through discursive norms and practices to prescribe particular ways of interacting in public forums” (Asen 345 qtd. in Simmons and Grabill 420). However, risk communication models demonstrate ways that ordinary people can gather, invent, and synthesize the information they need to make judgments about “threat[s], hazard[s], danger or harm” related to the future of driving that threaten the status quo (Lupton 8). It is by virtue of risk communication interventions, which at least complicate an individual viewpoint (Sauer 227), that non-experts can manage higher quality participation such that they will be able to “work through various indirect exclusions” to both invent and perform professional knowledge (Simmons and Grabill 412).

Rhetoricians can Deliberately Mediate Conversations Germane to the Future of Driving so that they Become Sites for Knowledge Building

Given the social connectivity that digital life provides, it may be easy to understand what Luciano Floridi means when he says that “information and communication technologies... creat[e] new realities” (16). It might also be easy to understand how fully functioning driverless cars as transportation technologies will create new realities for those who are in effect plugged in or connected to the network. In fact,

“future generations will increasingly feel deprived, excluded, handicapped, or poor whenever they are disconnected from the infosphere, like fish out of water” (Floridi 12).⁸ However, just because we become more connected to the infosphere, doesn’t mean that we necessarily get better at engaging with strangers about uncertain futures. Considering that “future generations will live most of their time” in information-rich environments, rhetoricians have begun to mediate conversations to create access points for technological literacy (14).

Technology (and access to it) is typically perceived as an instrument to effect social progress. For this reason, technological citizenship implies matters of social justice. So argues Virginia Eubanks in *Digital Dead End*. Specifically, Eubanks theorizes *popular technology*, a discursive participatory space with the goal of “help[ing] everyday experts from a wide variety of social locations become more critical in their thinking by posing contradictions and problems in ways that lead them to the next stage in their analysis of the information age” (105). Ultimately Eubanks wants to build capacity to aid in the paradigm shift required to actively engage with and seek out computer-mediated discursive spaces. *Popular technology* can be understood as an approach to information-technology design and implementation that leverages collaboration in order to create systems capable of “achieving equity in the information age” (104). This approach highlights the constructed nature of online spaces. By implication, if an online space is to enhance the rhetorical capacities of participants to reason together about their shared and

⁸ In her commitment to “fighting for social justice in the information age” (the subtitle of her book “Digital Dead End”), Eubanks shows that for those already connected, informational rich spaces boast luxuries – they potentially liberate, save time, produce social connections and increase mobility. However, for those who are not connected, most likely from the lower socioeconomic strata, the future may increasingly feel stuck in the past.

uncertain future, then that space must be carefully designed with the goals and practices of such deliberation clearly in mind.

A similar approach, *participatory culture*, is theorized by Lisa Potts who studies the web-based tools people use in disaster situations. She has found that people turn to familiar tools, not specialized ones, and use them in unanticipated ways—only to learn (and here’s the clincher) that the platforms are inadequate. For Potts, a *participatory culture* is one in which “people are actively engaging with digital content, building networks, working across spaces, and connecting in productive ways” to find lost loved ones during the London Bombings, for example (14). In identifying patterns and discussing the structure and use of technologies for participation, Potts argues that experience architects should “becom[e] active participants in the communities for which they design [...] to create systems that allow information to flow between people and technologies” (4). Potts continues:

By helping users to locate and validate online information during a disaster, information designers *can trace how users build narratives across multiple systems*. Understanding the complexity of these situations will inform the creation of more flexible systems by which everyday users can exchange information when it is most important. (emphasis mine, 283)

This disciplinary conversation about mediated or “architected” experiences matters to my interest in public conversations about driverless cars because it shows scholars calling for rhetorical interventions capable of supporting new responses in public spaces where participants must be able to connect and communicate about their public lives in ways that involve a shared notion of the common good.

Designing a Tool to Support Community Dialogue about Driverless Cars

Given that public talk about the future of driving is circulating in online discursive spaces, what remains to be imagined or instantiated is how publics can be helped to deliberate over this major shift in transportation potential. Being that driverless cars is an unfolding human drama, as Mike Hübler explains in *The Drama of a Technological Society*, we will face conflicts when agency shifts between machines, humans and “meaning can be found only in machines and techniques, not in the creativity and passions of the human spirit” (1). To explore a means of supporting local-public dialogue that invites individuals to interpret and to organize the drama of the future of driving, I turn to community literacy scholar Linda Flower. Flower’s work supports the gathering of diverse publics for the purpose of generating deliberative discourses, discourses which translate otherwise private concerns “into shared public concerns” (Flower, “Going” 147). Interactive gatherings such as community think tanks or other community conversations can empower ordinary people to “go public” using their own “literate repertoires” (Long 5) in atmospheres where individual narratives and situated knowledge are valued alongside research claims and policy talk (Flower, “Going” 147). Such inclusive public talk contributes to the health of the local public sphere (Crick and Gabriel; Habermas).

The crux of community literacy, and what makes the work of community engagement difficult, is that whether marginalized or privileged, all participants must be able to form a public by “constructing a discursive process and a space for dialogue and deliberation in which everyone is recognized as a legitimate partner in discovery and change” (Flower, *Community* 151). To help participants achieve this kind of dialogue,

Flower commends “strategic rhetorical practices” including collaborative planning, seeking the story behind the story, rivaling, and exploring options and outcomes (*Community* 55). In the same vein, Janet Atwill in *Rhetoric Reclaimed* commends non-standard *techne* or *technai*, which are “stable enough to be taught and transferred but flexible enough to be adapted to particular situations and purposes” (48). Potentially, each strategy or *techne* “deforms limits into new paths” and provides people with the tools of rhetorical intervention (68).

Instead of relying on goodwill or happenstance to spur local public dialogue, community activist-educators use context-specific *techne* to “help structure the vital public work that ordinary people call for but that otherwise doesn’t occur much, if at all in contemporary public life” (Long, “Prometheus” 201). Successful interventions yield genuinely diverse transformations including the following, all referenced by Long (“Prometheus” 206): “collaborative decisions” (Simmons and Grabill 420), “consensus” (Coogan, “Service” 689), “enlarged thought” (I. Young 52) and “realistically complex understandings of issues of shared concern” (Higgins, Long, and Flower 27). Unsuccessful interventions, on the other hand, seek to impose systematic, rigid or fixed strategies that may be seen as being “employed in the service of dominant power interests and at the expense of community residents” (Long, “Prometheus” 198). But, as Eli Goldblatt suggests, a “noninterventionist” approach instead empowers and enables community members to “discover their shared interests and to listen and learn from one another in order to put what they learn into action” (140; Long, “Prometheus” 205). In this manner *technai*’s intrusive nature can be appreciated as a positive force that supports local public deliberation.

What Makes Deliberation “Successful”?

With the sense that ordinary people may already be concerned about types of automation or driverless cars disrupting their lifeworlds, I have grown committed to a version of community dialogue that welcomes people to a “rhetorical experiment in inquiry” that, when successful, transforms a group of relative strangers into a deliberative community where differences are engaged productively and people “return to their own spheres enabled to think and act differently” (Flower, “Intercultural” 29). To design this particular space of inquiry, I anticipate that participants will arrive either with a sense of driverless cars that they accept, reject or stand somewhat neutrally on the subject; and if successful, they will leave with a greater sense of their own and others’ “hidden, interpretive logics” and “situated knowledge” about the future of driving—information that will elicit real differences in ways individuals accept the future of driving or focus on its problems (Flower, *Community* 151). Scholarship in community literacy has guided my thinking about the importance of designing and structuring a kind of public talk that will build capacity, enabling ordinary people to engage with strangers by “*us[ing]* the differences of race, class, culture or discourse that are available to them to understand shared questions” (159). But, considering that participants may not readily perceive the topic of the future of driving as controversial (or even conflictual) and conflicting voices may be dismissed, I hypothesize the usefulness of Kenneth Burke’s frames of acceptance and rejection (159). That is, the frames may simulate diversity and instantiate a space of shared reasoning from which participants can engage in negotiated and collaborative meaning-making.

Frames of Acceptance and Rejection

In *Attitudes Toward History*, “Burke arranges various attitudinal postures into three broad categories—acceptance, rejection, and transition—that define our discursive responses” (Buerkle). These postures, also known as poetic categories, attitudes, orientation frames or literary frames, are used both by writers to cope with life and by readers to decipher a writer’s meaning (Warnock 67). In this way, frames provide an “orientation” as they demonstrate “a bundle of judgments as to how things were, how they are, and how they must be” (*Permanance* 8). It is from one of the three acceptance frames (epic, tragic, comic) or three rejection frames (elegy, satire, burlesque) that a person recognizes social or political change (fully driverless cars or their predecessors) as “friendly” or “unfriendly” forces to be rejected or accepted (20). As Brian T. Kaylor explains, Burke thought “that history [was] constructed in such a manner as to lead to the acceptance or rejection of the social order,” which is “accomplished by the framing of the individuals involved:” acceptance frames “attempt to show favor for and help confirm the status quo” and rejection frames “point out the problems of the social order and the reasons to denounce it” (1). In other words, acceptance frames (epic, comic, and tragic) “respect the current system and confront problems or challenges in a manner that remedies the difficulty without having to make any serious changes to the established order. By contrast, rejection frames (burlesque, satire, and elegy) seize upon a moment of disharmony as demonstrating the system’s fatal error and need for some new organization” (Kaylor qtd. in Buerkle 1).

Though much scholarship has explored the use of acceptance and rejection frames to analyze the dynamics of situations, transitional frames (grotesque, didactic) have been

less often used to point to ways that conflicts are sometimes not clearly accepted or rejected (Boje, Luhman, and Cunliffe; Chesebro and McMahan; Olbrys). The fact that transitional frames were included in Burke's original theorizing suggests that the frames are not of "chemical purity" but instead might exhibit a degree of "free play" whereas elements of both acceptance and rejection can exist concurrently (Burke, *Attitudes* 57). In the case that one would encounter a new phenomenon – driverless car technology – a person may be forced to "coach" his/her mind toward resolving the dissonance by erecting a "higher synthesis" to "accept" it (92, 106). This synthesizing move, which includes "transcendence," is necessary to frames of both acceptance and rejection (106). This notion of "coaching" our minds is also an interesting component of social inquiry, especially if the immediate goal is careful, collective deliberation rather than another outcome: acceptance or the decision itself.

Considering the many varied opinions and national attention that the advent of driverless cars will entail, this dissertation puts each of Burke's frames into play as a means of studying "simultaneous contradictory frames" (Kaylor 1). As Kaylor explains, "arenas that naturally involve differing and competing viewpoints, such as religion and politics, are not well suited for the one-dimensional approach that the original concept of Burkean frames created" (1). Therefore, in order to fully analyze complex situations, "the existence of multiple and diverse frames should be recognized and studied" (1). My study commends the generative capacity of Burke's dramatic frames of acceptance (epic, tragic, comic) and rejection (elegy, satire, burlesque) to be, once stabilized, shared and compared. Surely interpreting driverless cars through Burke's frames could be a private act (as I demonstrate briefly in the next section), but I commend the process as a

collaborative one, one that supports the shared use of reason in the face of a public scientific controversy. Consider in the next section, for instance, the potential of Burke's epic frame to support shared inquiry.

Acceptance in the Epic Frame

Well-known epics include Beowulf, Gilgamesh, and the Odyssey. In these and other epic tales and poems, heroes are lauded and their stories are made legend. In their time and still today, their feats “‘advertis[ed]’ courage and individual sacrifice for group advantage —and enable[d] the humble man to share [his] worth” (*Attitudes* 35). The epic operates as an acceptance frame because, as Burke explains, “the sense of one’s limitations (in comparison with the mighty figure of the legend), provides one with a realistic attitude for gauging his personal resources” (36). That is, with an “epic” mindset one identifies with a hero and by doing so gains both dignity and humility by “seek[ing] the flaw in oneself” that is unlike the hero (36). This experience results in an “attitude of *resignation*” that does not buck the status quo (37). In a more everyday sense, the epic frame includes people who have more human-like qualities though they are still much “larger than life”. Heroes respect the current system, and they tend to stand as role models, encouraging others to do the same.

From the epic frame, driving, or one’s ability to drive, can be seen as an opportunity to exceed human limitations. Driving heroes include those with expertise that is revered: Nascar drivers, long-haul or ice-road truck drivers, or professional drivers featured in new car advertisements. As these examples might demonstrate, it is by driving cars that individuals can also identify with heroes in terms of sharing substance (see

cason reference above). In the same vein, cars can be considered as the heroes that have allowed suburban development, created millions of road construction and maintenance jobs (i.e. FDR's Public Works Administration), and dominated the landscape to the extent that we cannot imagine life without them. As Sarah Redshaw explains, "cars have had an enormous impact on the way communities function and how we live our lives" (7). From an epic perspective, community members should accept the ever increasing presence of cars in neighborhoods and roadways and share the enormous costs of road maintenance and expansion so that "speed and efficiency with the promise of uninterrupted flow of traffic" can remain the focus of urban planning (Redshaw 6). Further evidence that cars and driving dictate the layouts of cities and inform the ways that citizens move and interact socially point toward the epic, which exemplifies how citizens should interact with society.

The epic frame, along with the other five, are amenable to developing *technai* or strategies for productive knowledge-building that scaffold social inquiry and the shared use of reasoning in the face of public scientific controversies because they explicitly point to ways ordinary people recognize social or political change (fully driverless cars or their predecessors) as "friendly" or "unfriendly" forces to be accepted or rejected (20). Given that driverless cars are an impending reality, my version of scaffolded dialogue asks participants to "circulate" interpretations of each frame before negotiating them in relation to scenarios about driverless cars. This work constitutes social inquiry that supports citizens' abilities to recognize and interpret the social order, identify disruptive symptoms in their environment and contribute to the health of public life.

My hypothesis for this project is that Burke's dramaturgical frames offer participants a vocabulary that is both accessible and generative enough to interpret and organize the drama surrounding driverless car technology. I turn Burke's six frames of acceptance and rejection into *technai*, which, in the hands of a sufficiently diverse collection of community members, temporarily stabilizes, elicits and compares their interpretations of the present and future of driving; the frames act as a space of shared reasoning from which participants can engage in negotiated and collaborative meaning-making.

Framing Core Questions

Based on the three claims elaborated above, I have drawn on theory (Burke's frames of acceptance and rejection) to design a tool (a computer-based dialogue) to help everyday people inquiry together (an act of community literacy) about the future of driving. This work frames the core questions of my research study, which are addressed by individual chapters:

- 1) When successful, what does the deliberative discourse that participants construct together using this tool look like and do? (Chapter 4)
- 2) What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk? (Chapter 5)
- 3) What kind or kinds of knowledge does this discourse construct? (Chapter 6)
- 4) From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces? (Chapter 7)

Chapter Descriptions

This introductory chapter articulated the exigency and purpose of this dissertation. The remaining chapters detail how I set out to develop a new literate practice capable of fostering speculative thinking about future-oriented topics (i.e. the future of driving), by embedding it (the practice of “*framing*”) in a community dialogue to test its potential to help ordinary people weigh in on the future well-being of their communities.

Designing the Interface

In chapter two, I lay out the key parts and the corresponding rationale I used to design an intentionally-mediated discursive space to change the quality of public talk on the subject, if only locally. My approach relies on community literacy values and user experience principles to realize four key goals: 1) Participants will engage in a conversation without a facilitator, 2) Participants will explore a speculative topic, 3) Participants will engage difference, and 4) Participants will value their experience. With this however, it is important to note that I do not test the sufficiency of each of these parts in fine detail; the goal of this study is to look at the ways in which engagement, speculation and difference show up in the community dialogue. Therefore, this chapter explains and details one way that a computer-mediated conversation about the future of driving might be designed to build knowledge with the potential to affect how everyday people come to reason together.

Devising the Methods

This third chapter outlines and discusses the research approaches used in this study, proceeding in two parts. The first part details the discrete components of the community dialogue or methods of data collection: recruitment procedures, participant selection, and participation (live study, follow up surveys and interviews). The second part lays out how the resulting data from the study will be analyzed according to qualitative methods, especially grounded theory (Charmaz, Glaser and Strauss, Flower) to derive theoretical accounts of what happened from coded data. These methods are poised to answer the larger research questions at the heart of this dissertation, which focus both on explicating the deliberative discourse generated by the computer-based tool as well as testing the weight and worth of Burke's frames to structure speculative discourse.

Analyzing the Results of the Community Dialogue

Chapter four presents the results of the study. These results report on coded data generated from the community dialogue (live study), follow up surveys and interviews to demonstrate emergent categories and themes for the purpose of answering the first two of the larger research questions: 1) When successful, what does the deliberative discourse that participants construct together using this tool look like and do? What kind or kinds of knowledge does this discourse construct? 2) What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk?

Analyzing the Results of Participant's Assessments

Chapter five is specifically concerned with answering the question: What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk? I draw from the follow-up surveys and in-person interviews to account for ways participants make use of and make reference to the tool (Burke's frames) for directed and undirected purposes and experience "a new kind of public talk", which contrasts with more familiar versions of public talk that participants understand.

Analyzing the Discursive Construction of Knowledge

Chapter six focuses on moments of productive conflict, which press participants to negotiate competing voices in order to construct meaning and ultimately build knowledge. I combine all of the data I collected (transcript, electronic survey and follow-up in-person interviews) to track moments of conflict/negotiation to identify kinds of knowledge constructed by the discourse.

Conclusion: Why Does Productive Speculation and the Practice of Framing Matter?

Chapter seven reviews the key questions guiding this study in order to summarize the key findings and takeaways regarding productive speculation as a disciplinary concern. I offer suggestions for future iterations of the interface itself. Also, I discuss the implications of this study (with the goal of answering the final research question),

especially as it may inform the work of public-spheres theorists, the first-year composition classroom, and technologists.

CHAPTER 2

DESIGNING THE INTERFACE

Introduction

Online discourse does not in itself provide a deliberative experience for the vast majority of participants—so indicates the literature reviewed in the previous chapter. Instead, to more fully assess and manage perceived and potential risks associated with the future of driving, we need to deliberate with others as members of literate communities. That is, commenting online to an article about driverless cars isn't the same thing as “deliberating with others” in a “literate community” where participants learn strategies to “reorganiz[e] normal patterns of communication and authority” and inquire together, going beyond pet theories, vague abstractions, and false binaries (Flower “Intercultural” 245; cf. Cintron; Clifton, Long and Roen; Flower; Young). According to John Dewey, opportunities for local public talk are the very place where we are most apt to deliberate complex problems that challenge our capacities to comprehend them and their impacts. In this chapter, I explain how I designed an intentionally-mediated discursive space to change the quality of local public talk on the subject of the future of driving. This approach relies on community-literacy values and user-experience principles to pursue four key design goals: 1) Participants will engage in a conversation without a facilitator, 2) Participants will explore a speculative topic, 3) Participants will engage difference, and 4) Participants will leave with more than they came in with.

This chapter proceeds in two parts. The first part provides a brief overview of the interface design, noting its key components. The second part more specifically discusses each of the four key design goals for ways they speak to community-literacy values and

user-experience principles and are instantiated in the community dialogue. I use screenshots of the interface throughout to show how the dialogue is experienced by participants as a collaboratively negotiated computer-mediated series of tasks with specific design goals.

Community Dialogue Interface Overview

The computer-based nature of the community dialogue is realized by its placement on the Google sponsored platform *Blogger*. Participants must have access to this web link (www.commmunitydialogueonthefutureofdriving.blogspot.com) and web space (computer monitor, mouse, and internet) before they are able to navigate through the network of embedded hyperlinks to pages by selecting paths and clicking a mouse. In its current state, the community dialogue interface consists of a *homepage*, an *end page* and three internal *major steps*. A screenshot of the homepage below demonstrates the leading question (i.e., What Do We Think about Driverless Cars?) and the series of steps that are included. Also apparent here is the interface aesthetic, which is consistent across all pages of the interface: the background image is of an out of focus but sun drenched open road running through a green landscape, and set upon this image is a static set of grey boxes with textual details. (See Figure 1.)

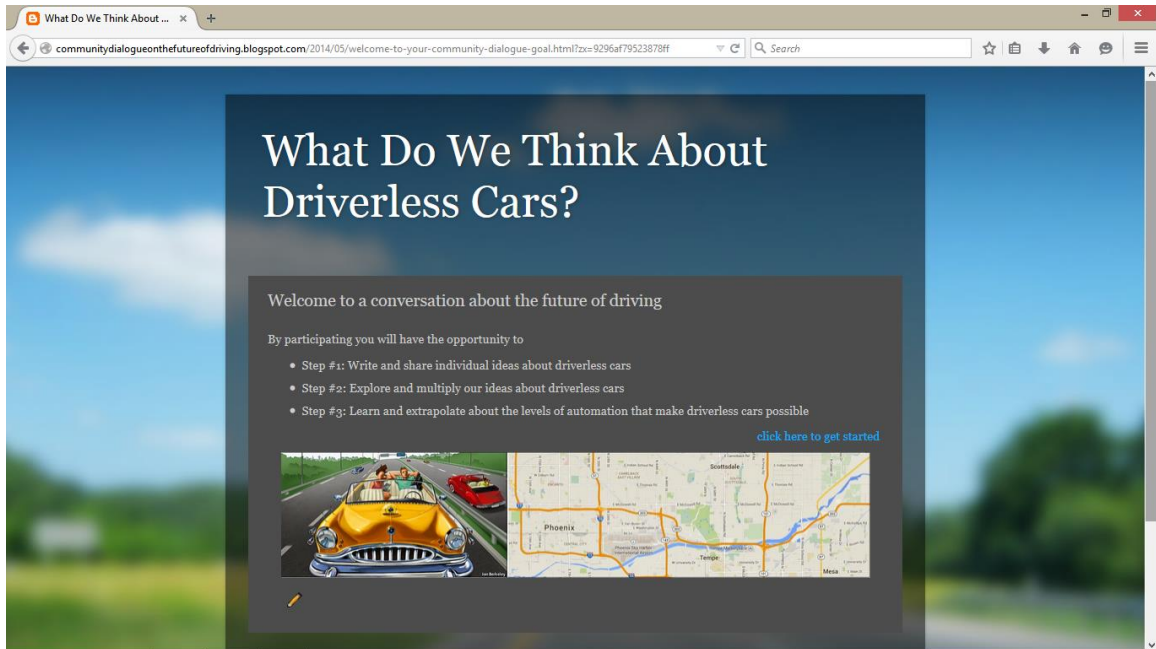


Figure 1: Homepage - Community Dialogue

The major steps are listed in bullet point form on the homepage. The navigational link at the bottom right side of the page (just above the image) (i.e. “click here to get started”) allows participants to pilot the interface linearly. Once participants move beyond the homepage, they will encounter feature the same components on each Step: *discrete tasks* and corresponding *materials and hyperlinks*. Table 1 below shows how these categories (major steps, discrete tasks, materials and hyperlinks) fit together to realize *basic goals*, which succinctly demonstrate both what participants are prompted to do (by completing the discrete tasks), and how the dialogue is designed to scaffold the increasingly complex thinking the interface.

Table 1: Community Dialogue Interface Overview (Major Steps, Discrete Tasks, Materials and Hyperlinks, Basic Goals)

Major Steps	Discrete Tasks	Materials and Hyperlinks	Basic Goals
Step 1: Write and share individual ideas about driverless cars.	“Respond to the question: <i>What do you think about driverless cars?</i> Then discuss your answers.”	Handout - Half sheets of paper and pencils Help Link – Eight questions prompt thinking	Leverage the leading question Cause participants to articulate any and all ideas they have on the topic
Step 2: Explore and multiply our ideas about driverless cars.	“Take turns reading, reacting and becoming familiar with each frame, filling in your handout”	Handout – Full sheets of paper with three questions written in columns Handouts – Six double-sided “attitude sheets” show images and texts of each ‘frame’ Help link – Explains the frames’ design and purpose	Introduce the six frames and the concept of framing Cause participants to build on their initial ideas by identifying distinctions between the frames
Step 3: Learn and extrapolate about the levels of automation that make driverless cars possible.	“Take turns reading and reacting to each scenario with the selected frames from Step 2.”	Scenarios – Full sheets of paper with situational details Help link – Exemplifies how the frames might change a response to a scenario	Instantiate the frames and levels of automation in three scenarios Cause participants to use the frames to articulate and categorize realistic, novel responses to automated possibilities

Major Steps

The interface is composed of three major steps. In this section, I detail each step one at a time by highlighting goals and design features.

Step 1: Write and share individual ideas about driverless cars.

This first step leverages the headlining question (What Do We Think about Driverless Cars?) to jump start the dialogue and draw out pet instincts about technology or driving that participants arrive with. The *Help link* consists of six driving related questions that serve to encourage and allow participants to find a productive conversation about the future of driving (i.e. Do you like to drive or are you more comfortable as a passenger? What constitutes good driving? What would you say the future of driving will look, sound, smell, feel like? etc.) (See Figure 2.)



Figure 2: Step 1 Narrowed Screenshot

Step #2: Explore and Multiply our Ideas about Driverless Cars.

This second step is designed to support shared reasoning, helping participants build upon and purposefully multiply what they understand (and just shared in Step 1) about the future of driving. Therefore, key here is the introduction to Burke’s six “frames” of acceptance and rejection (epic, tragic, comic, elegy, satire, burlesque) through attitude sheets – two-sided documents which represent each frame (i.e. epic, tragic, etc.) respectively (the images and text in grey combine as a larger package or genre of ideas). The accompanying *Help link* serves to further explain how the concept of framing is instantiated. A *Handout* supports this work by prompting participants to write specific content including “some keywords to remember the frames by” and whether the frames “show people or cars positively or negatively”, for example. (See Figure 3.)

Step 2: EXPLORE and MULTIPLY our ideas about driverless cars

Materials: There are six "frames" and individual handouts in the middle of the table and hyperlinked below.

Task: As a group, take turns reading, reacting and becoming familiar with each frame, filling in your [handout](#).

Goal: Work together until everyone selects one frame that captures his or her attention most.

Help: Use [this link](#) to prompt your thinking about the design and purpose of the frames.

Epic	Tragic	Comic	Elegy	Satire	Burlesque
					
Epic	Tragic	Comic	Elegy	Satire	Burlesque

[Click here to move on to Step #3](#)

Figure 3: Step 2 Narrowed Screenshot

Step #3: Learn and Extrapolate about the Levels of Automation that Make Driverless Cars Possible.

This final step asks participants to use the attitude frames and a rudimentary understanding of the levels of automation (gained as a result of encountering the scenario pages) to respond to three scenarios: “Stuck in Traffic,” “Running Errands,” and “Going on a Road Trip.” Each of the three scenarios is designed to draw participants into an experience (i.e. getting stuck in traffic) with a vehicle of a specific level of automation (i.e. level 1). Though it cannot be seen here, each scenario is paired with a different level of automation. By this I mean each scenario begins by setting up the situation (i.e. “Stuck in Traffic”) and proceeds by prompting participants to answer two key questions that embed a level of automation in the situation (i.e. “What might getting stuck in traffic in a combined-functional automated vehicle look like in each frame?”). The *Help link* here serves to articulate example answers as to how the different levels of automation can intersect with the widened response base generated by the attitude frames. (See Figure 4.)

Step 3: LEARN and EXTRAPOLATE about the levels of automation that make driverless cars possible

Materials: There are different driving scenarios in the middle of the table and hyperlinked below.

Task: As a group, take turns reading and reacting to each scenario with the selected frames from *Step 2*.

Goal: Work together to respond to each future driving scenario with as many of the six frames as possible.

Help: Use [this link](#) to prompt your thinking about responding to the scenarios by with different frames.



Scenario 1: Stuck in Traffic Scenario 2: Running Errands Scenario 3: Going on a Road Trip

[Click here to finish the conversation](#)

Figure 4: Step 3 Narrowed Screenshot

This first section provided a brief overview of the interface design, noting its key components. The second part more specifically discusses each of the four key design goals for ways they speak to community literacy values and user experience principles and instantiate them in the community dialogue.

Four Key Design Goals

In the sub-sections that follow, four design goals serve as a lens through which to understand how the design of the community dialogue interface has adapted community literacy values and user- experience principles to its purposes.

Participants are Engaged in a Conversation without a Facilitator

Community literacy projects tend to rely on facilitators to help ordinary people manage their engagement in public discursive encounters. Facilitators can work closely

with participants before (to prepare them to share their situated knowledge and use literate strategies (learned previously). For example, “In Community Think Tanks, student researchers do the groundwork for deliberation by collecting critical incidents from a wide range of stakeholders. They use this data to create a briefing book of prototypical problem scenarios (e.g., a conflict between an overworked/ behind-schedule nursing aid and an understaffed nursing supervisor)” (Higgins, Long and Flower 22). Additionally, facilitators work with participants during live events to help focus and sustain deliberative dialogue, as Higgins, Flower and Long explain below:

In the landlord/tenant project, for example, the facilitator used a blackboard *to keep a running record of the rivals the group generated*—the genuine conflicts that arose because of the very real differences in how participants had experienced and interpreted landlord/tenant disputes. Periodically within each session, the facilitator would also *review and consolidate these rivals...* giving the group members an opportunity to clarify their points before the notes were transferred to the computer, printed, and distributed. (emphasis mine, 25)

Facilitators in the above example free participants up to explore the topic with their full focus, leaving the responsibility of capturing the trajectory of thought up to literacy leaders. Additionally, the documentation and consolidation of rival positions and rivals records key information for the group’s knowledge building. Certainly this is a legitimate structure. However, I’ve wondered: can community literacy projects fly without the help of facilitators? Or, in other words, I wanted to test the capacity of the interface’s design to engage participants in a conversation without a facilitator, especially given that the topic of driverless cars is itself a test of how much we can benefit from technology.

When it comes to designing interfaces that humans will interact with, researchers can turn to scholarship in “Interaction Design” or most evidently “Human Computer Interaction”, fields with well-established roots, which most recently have come to plant in

the field of user experience. As Marc Hassenzahl and Noam Tractinsky explain in *User Experience – a research agenda*, ID and HCI were shown to focus more on *tasks* (in systems-based agendas) at the expense of working with users to discern “what constitutes a ‘good’ user experience” (Hassenzahl and Tractinsky 91). In this way, “user experience approach extends usability techniques” (Kiili et al. 79; Simmons and Zoetewey 251). For my purposes, I begin designing the user experience by focusing here on the lowest rung of the user experience ladder—with conventional usability standards. I do this to ultimately ensure that participants are not burdened by technical aspects of the interface as they begin to “talk across difference,” as Flower would say, without the help of live facilitators (Nielsen). Criteria for such a user experience include creating “self-evident navigation, scannable layouts, and links distinguishable at a glance” (Simmons and Zoetewey 251). To build a schema for the work ahead, participants need clear instructions from start to finish; to conduct the work they need freedom to navigate across instructions as they wish. Toward this end, in Figure 5, the major steps are cropped and juxtaposed to show the navigational links in the bottom right-hand corners which participants can use to move through the interface at their will. (See Figure 5.)



Figure 5: Major Steps Juxtaposed to Show Navigation Links

Second, participants need to have access to strategically placed help, so that in the event of a breakdown, a means of getting back on track is available. For example, in the context of the key task of Step 2 (“Take turns reading, reacting and becoming familiar with each frame, filling in your handout”) the help link further explains the concept of framing by forwarding the notion of a “package of ideas”. (See Figure 6.)

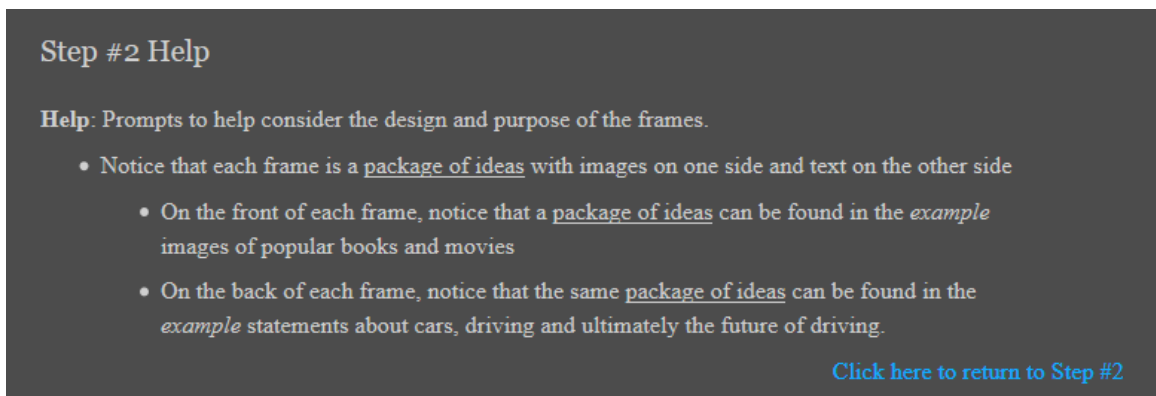


Figure 6: Step 2 Help link - Narrowed Screenshot

Third, participants need a way of capturing their thoughts and the thoughts of others in order to build momentum for transformed thinking in the remainder of the community dialogue. Two handouts in the dialogue are designed to do this work. For example, the Step 1 handout scaffolds a round of sharing and discussion that begins at the participants’ discretion – once everyone has had time to collect their thoughts on paper. (See Figure 7.)

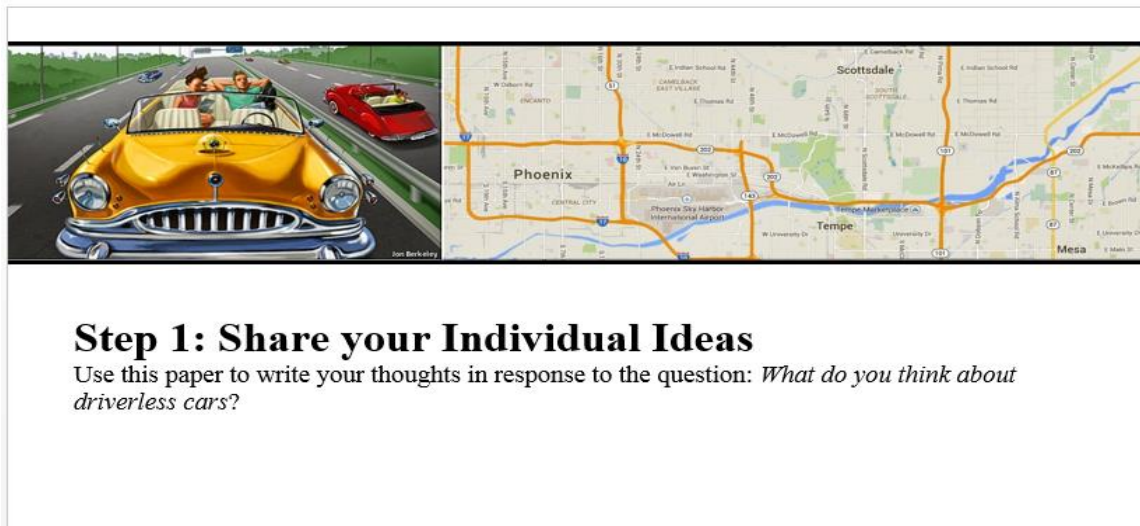


Figure 7: Step 1 Handout

As Flower tells us, “True dialogue needs a point of stasis, a way of opening a shared question so that people can deliberate together (and not just rehearse their standard stories)” (“Intercultural” 248). With the help of the handout (and the help link), participants’ written words can act as a spring board to allow them to share their unique situated knowledge (to report on what they’ve heard or read from various news sources they frequent, or communicate fears or positive aspects they perceive in projections of the future of driving), and potentially engage in the dialogue without a facilitator.

Participants are Exploring a Speculative Topic.

Community literacy projects tend to focus on local communities' experiences with controversies regarding literacy, education, social policy, and democratic participation (e.g., see Coogan, "Service"; Cushman, *Struggle*; Goldblatt, "Alinsky's"; Hull and James), and to show ways that bureaucratic discourses would frame ordinary people as "less powerful" or "invisible" in the interest of institutional power (Higgins, Long and Flower 15). Because of this, community literacy scholars help people to build capacity to affect local social change by learning to value their unique situated knowledge and to develop literate practices with which to articulate their perspectives in conversation with others by *rivaling, seeking the story behind the story and exploring options and outcomes* (Flower, "Intercultural").

It follows then that in taking up a speculative topic, like the future of driving in this case, ordinary people should still be able to rely on their unique situated knowledge to gain access to and inquire into topics of concern. The problem, however, is that situated knowledge is "difficult to tap" and needs to "rise to the level of articulation" (Flower, "Intercultural" 20, Flower "Talking" 56). This is largely "because it is grounded in lived experience; people often encode and express this knowledge through various forms of narrative—*anecdote, dramatic reenactments of a problem, or personal stories they share* (Higgins and Brush 11)" (Flower, "Intercultural" 21). In the case of the future of driving, participants need a means of productively speculating about "*what might be*" in terms of "the possibilities and consequences of technological development and implementation" from their own positionalities – regardless of whether they in fact have driven for themselves (DiSalvo 244; Lukens and DiSalvo 27). Burke's frames of

acceptance and rejection are translated into a literate practice for this purpose – to foster speculative thinking through the use of Burke’s lenses, rendered here through cultural iconography. In other words, pursuing a speculative topic in a community dialogue demands a new literate practice, one that can draw out people’s experiences in the course of conversation (that they might not realize are relevant) to replace or augment situated experiential knowledge that, in this case, is necessarily limited (given the technological, future-oriented speculation going on here) and to theorize with into the realm of the speculative. I commend Burke’s frames to support participants in taking up this work. (See Figure 8 below for an example of one of Burke’s frames reconfigured to scaffold productive speculation into the future of driving.)

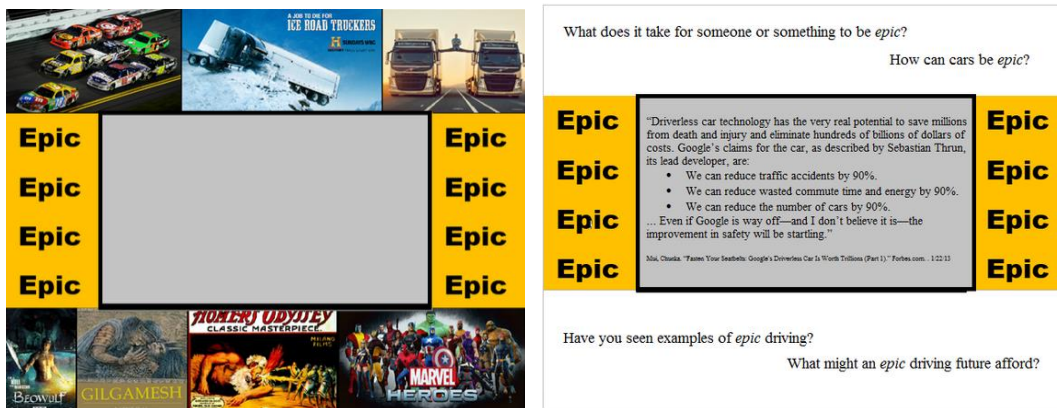


Figure 8: Attitude Sheet (two-sided) – “Epic” Example

Although part of the rationale for relying on Burke’s six frames is that they should be at least somewhat familiar, the six attitude sheets function to either teach or jog a participant’s memory toward a particular genre. Therefore, these six two-sided documents are designed to represent six specific points of view via multiple images on

the front, questions and one text-based instance on the back. These combinations of text and images are composed to embody the attitudinal perspective and support participants' efforts to solidify each package of ideas. The example above shows how the "epic" attitude is in line with popular books, movies and web-based news that commend the heroic benefits of the future of driving to its readership. As a literate practice that participants are introduced to in Step 2 and asked to apply in Step 3, the frames elicit, temporarily stabilize, and compare competing interpretations of the future of driving by taking participants through a process of introducing, reinforcing, and checking the accuracy of the key concepts (six attitudes). This effort ultimately scaffolds productive speculation into the future of driving by "help[ing] them to elicit something of the situated, affective, and embodied knowledge behind speakers' words (where important differences may lie); to embrace these as rival interpretations; and to draw themselves into a joint, reconstructive negotiation with their own understandings" (Flower "Talking" 40).

The collaborative work required to make sense of the collection of images and text on each frame (considering that no one participant is likely to be familiar with all references) shifts our focus from baseline usability standards to "[the] more user-oriented and performance oriented" notion of user experience (Kiili et al. 79). This notion seeks to get at "the extent to which a product can be used by specific users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use" (c.f. ISO 9241 qtd. in Agarwal, R., and Venkatesh 34). In the community dialogue, participants (users) rely on each other to "collaboratively construct knowledge through interactive processes of information sharing, negotiation and modification" to unearth

situated knowledge and complete the task (goal) of speculating productively after becoming familiar with the frames (context of use) (Gunawardena, Lowe and Abderson qtd. in Wang 2). Without the social dynamics of the context of use, the frames may prove to demand too much in the way of cognitive resources and ultimately weigh heavily on the overall effectiveness, efficiency and satisfaction users' experience than when the artifact is more "effortless[ly] and easily learned" (Kiili et al. 80).

Participants are Engaging Difference

In community literacy projects, a diversity of perspectives, which are embodied in participants' articulated situated knowledge, is key to opening up the possibility of engaging difference. When community literacy scholars talk about engaging difference they have a reverence for the work they are asking participants to perform and a precise kind of work in mind:

Engaging difference in dialogue also makes strong intellectual demands (Flower, Long, and Higgins 121–32). It is difficult to imagine and assess the response of someone else— to project anything but a stereotypical response—when that someone is a socially distant Other, someone whom we would rarely pass on the street, let alone engage in dialogue (Young, *Intersecting* 57–59). The challenge is to recognize Others as so present, so real, that we *not only understand but become more able to imagine the unique contributions they make to the inquiry.* (emphasis added, Higgins, Long and Flower 20)

In the spirit of building grounded and tangible understanding of others that can inform the imagination of inquiring participants (even if a diversity of embodied perspectives doesn't show up), the *technai* (teach frame is a single *techne*) inspired by Burke's frames of acceptance and rejection are theoretically up to the task. That is, frames can be seen as discrete "others" who themselves demonstrate an "orientation" and "a bundle of judgments as to how things were, how they are, and how they must be" (Burke,

Permanance 8). As a set of six dynamic “others” who stand (or sit, lay, dance, etc.) side-by-side on a spectrum of human drama, the frames of acceptance and rejection have the potential to enable participants to do the work of “not only understand[ing] but becom[ing] more able to imagine the unique contributions they make to the inquiry” (Higgins, Long and Flower 20). It is the purpose of this dissertation to explore the potential of the frames to scaffold deliberation into the future of driving, but it is the goal of this section to show how the interface is designed to help participants engage difference in the course of this community dialogue.

Higgins, Long and Flower tell us: “To engage difference in dialogue, it is... necessary to represent those not present through outside documents (Flower, “Intercultural” 250), to offer strategies for predicting and engaging rival perspectives, and to use writing to keep difference in dialogue” (26). In the community dialogue, I tested the capacity of Burke’s frames, instantiated in two-sided tangible documents, to provide occasions for “expand[ing] rather than narrow[ing] potential interpretations” through writing (24) in Steps 2 and 3. That is, even though participants are not overtly “learning to rival” as a strategy, as in tasked to “bring additional perspectives to the table by generating rival hypotheses – alternative interpretations, possible solutions – and to then test those hypotheses by considering possible rivals to them” and “rival their *own* ideas” (Flower Community 49), rivaling is a necessary component of the work of interpreting and making use of the frames (Higgins, Long and Flower 23).

In the first step, the handout supports brainstorming – a strategy associated with prewriting; it gets the brain juices flowing and can aid in locating a writing or thinking focus. But Step 2 pushes participants further, as Flower tells us we need to go: “we

already have well-learned if unconscious strategies for engaging with difference, but many of these are unlikely to produce knowledge or change” (*Community 57*). The handout below is designed to support the work of the second step, to “[e]xplore and multiply our ideas about driverless cars,” by giving participants an avenue for nailing down distinctions between frames. It does this first by prompting participants to respond specifically by identifying keywords that represent or capture the essence of the frame; keywords might be gathered from the conversation with their peers, the images on the front of the frame or the questions and text in grey on the back. (See Figure 9.)





Frames	WRITE some <u>keywords</u> to remember the frames by	Does the frame show people or cars positively or negatively? (CIRCLE your answer)	Does the frame show actions or driving positively or negatively? (CIRCLE your answer)	Does the frame ultimately accept or reject the future of driving? (WRITE your answer)
		+ -	+ -	
		+ -	+ -	
		+ -	+ -	
		+ -	+ -	

Figure 9: Step 2 Handout

Second, the handout is designed to help participants make key distinctions and compare their answers between positive and negative aspects they identify and each of the six frames. In addition, the handout serves to both cement the importance of articulating each of the possibilities such that no box is left empty.

In consideration of users, the handouts are designed to invite collaboration such that participants may draw on (and peek at) their peers' perspectives to help them respond to the leading questions listed at the top of the page. Both handouts create quasi-private and public spaces to “privilege individual cognition, personal representations, and productive differences” (Flower, “Intercultural” 239). The discussions that surround or buttress these handouts provide an engaging environment that spur users to complete particular tasks and accomplish the larger goals (understanding and making use of the frames to productively speculate about the future of driving) (Kiili et al. 80). There are two tasks at hand. First, the oral discussion with the group (which has the engaging aspect of social interaction), and second the public/private written worksheet (which has the engaging aspect of shifting attention to a physical artifact). So if participants are engaged with the more immediate task of infusing their unique insight into the collection of images and text to reveal the complexity inherent in each frame, then they will be more able to achieve the larger goal of “work[ing] collaboratively to build a better, more inclusive, more complex understanding” (Flower, *Community* 49).

Participants are Leaving with More than They Came in with

Community literacy projects design dialogue to spur people to build more complex understandings of a controversy based on the shared situated knowledge they hear circulated by themselves and others. As “a practical experiment in knowledge building” the experience is an opportunity to “attempt to embrace difference, conflict, and contradiction and, in doing so, transform understanding” (Flower, *Community* 52). This transformed understanding—gained through the listening, questioning and pursuing

of “complexities of other people’s reading of the world”—is the primary product participants take away from these types of community events (Flower, “Talking” 64). However, if this knowledge has a chance of becoming actionable, participants need to be prompted to instantiate their new understanding in the fabric of their everyday lives. One way community literacy scholars support participants in this work is by teaching the *options and outcomes* strategy, which both encourages participants to “specify the consequences that might reasonably ensue based on the knowledge they have gleaned from their work together” and “suggests that different stakeholders may need to respond to a problem in different ways, making different trade-offs and choices in the face of no obvious ‘good’ option” (Higgins, Long and Flower 26).


Participants in the community dialogue on the future of driving are encouraged to “specify consequences” and differentiate responses by exploring scenarios in Step 3 with the help of the frames (26). That is, Step 3 is designed to lead participants to deliberate - to think with depth and breadth about the risks associated with the future of driving; how increasing automation might affect every day human life, causing lifeworlds to become decoupled (Crick and Gabriel 209). This is key, as Flower explains because “the deliberative model... argues that in discussion and exchange we actually discover our interest. This process brings our needs to consciousness, lets us clarify our poorly understood problems, uncover new ways to frame issues and discover shared interest” (*Community* 34). Therefore, the scenarios are designed to productively contextualize the future of driving for the purpose of leading participants into deliberation where they might gain “‘interdependence with strangers’ by understanding [their] own interests more

broadly” (Hauser 53-54 qtd in Flower 252) and begin to identify differences that may really matter in their own lives and in the lives of others.

By asking participants to articulate more than one response to a scenario, they are pressed to use the understanding they gained in Step 2 to “imagine unique contributions [that the frames] make to the inquiry” (Higgins, Long and Flower 20) and specify consequences. For example, a participant may begin Step 3 by articulating a *tragic* response to the first scenario, *stuck in traffic*, which may lament the fact that congestion happens, but ultimately accept its inevitability as a fact of present life. (See Figure 10.)

Scenario 1: Stuck in Traffic

It's happened. You were driving along just fine until traffic suddenly came to a stand still. There's no way to tell what caused the traffic jam. It could be an accident, construction, gridlock, poor driving, a broken traffic light or any number of things. One thing is clear - you're not going very far for a while.



Task: As a group, review the *Levels of Automation Table* to answer the following questions:

- What might getting stuck in traffic in a combined-function automated vehicle look like in each frame?
- What might getting stuck in traffic in a limited self-driving automated vehicle look like in each frame?

Goal: Consider how watching the road, working the steering wheel and the break pedal change *dramatically*.

Help: Use [this link](#) to prompt your thinking about the frames and levels of automation simultaneously.

[click here to return to scenarios](#)

Levels of Automation Table






				
0: No Automation	1: Function-Specific	2: Combined-Function	3: Limited Self-Driving	4: Full Self-Driving

Figure 10: Scenario Example – Stuck in Traffic

The participant in this case may explain that he or she simply passes the time during a traffic jam by surfing the radio waves for indie classics to sing along to. In the community dialogue, however, this same participant may then need to shift that response dramatically to cast the future of driving as *elegiac* undesirable in the sense that it is currently sufficient or that a past state was even better; the *elegiac* frame captures this attitude and casts a nostalgic and mournful positionality. This kind of work, which “prompt[s] a writer to imagine her perspective as one among others, to figure out how to frame her text in relation to other anticipated perspectives so that hers might not only get a fair hearing but also possibly encourage others to revise their understanding of the problem in light of the situated knowledge she has to offer” is exactly what community literacy scholars are after when they seek to help participants transform their understanding (Higgins, Long and Flower 37).

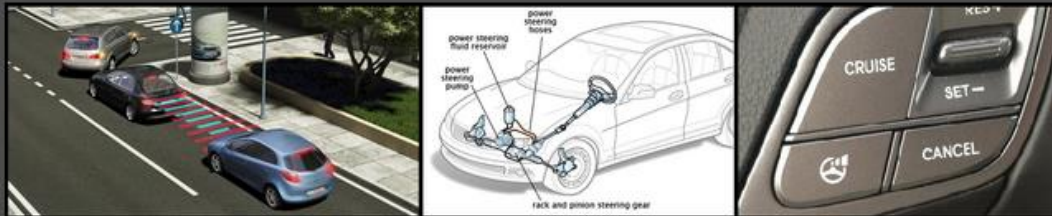
In terms of differentiating responses, the scenarios ask participants to pinpoint ways that two levels of automation in particular (combined-function and limited self-driving) might play out when seen from the vantage point of each the different frames. These tasks are designed in this way to lead participants to build domain knowledge about how the levels of automation identify increments of advancement. So each level of automation is explained as simply as possible on its own page. (See Figure 11.)

Level 1: Function-specific Automation

Automation at the function-specific level assists the driver by sharing "the primary vehicle controls – brake, steering, throttle" – regarding one or more specific control functions, according to the [NHTSA](#).

Examples of function-specific automation include

- *Brakes* - Anti-lock breaks (prevents the brakes from locking and losing traction), electronic stability control or break assist (allows drivers to stop faster or regain control by reducing power and breaking)
- *Steering* - Power steering or dynamic steering response (lowers the steering effort required of drivers (regardless of condition) with hydraulic or electric actuators)
- *Throttle*- Cruise control (takes over the throttle of the car to maintain a steady driver set speed)



Brakes

Steering

Throttle

[click here to return to "Stuck in Traffic"](#)

Figure 11 - Levels of Automation Example Page – Level 1: Function-specific Automation

Participants both specify consequences and differentiate their responses by completing the uniform tasks of the scenarios (*What might (getting stuck in traffic, running errands, or going on a road trip) in a (function-specific or combined-function) automated vehicle look like in each frame?*). This is important given that participants would most likely gloss over the levels between function-specific automation (the level that would be most familiar to participants who have had experience with cruise control), and fully automated vehicles, which of course do everything that a driver would do. Designing the scenarios in this way ensures that participants will leave the community dialogue with at least a clearer sense of how fully driverless cars could come about as a

steady progression of technological advancement, but this low hanging fruit is a low priority goal of the project as compared to learning from different perspectives.

User-experience principles come into play here in the sense that the community dialogue has to stimulate productive speculation into the future of driving that is meaningful and somehow memorable if participants are going to leave with more than they came in with. This is difficult, as Kiili et al. explain, because “a key challenge for designers is to get the correct balance between entertainment and fulfilling specified cognitive outcomes” (8). Certainly, participants might not enjoy the largely cognitive (though socially embedded) experience of being confronted with ideas that challenge their previously held beliefs. However, the context of use (interplay of users, artifacts and tasks) is mediated by the ominous yet speculative nature of the topic, which has a certain entertainment value when paired with the cultural references involved in discussing the frames. The fact that participants will leave the dialogue and likely encounter driving and social texts (which factor into the frames) in their everyday lives suggests that their experience in the world may evoke a memory of the community dialogue. These opportunities can remind participants of the value of their own and other’s situated knowledge and of the necessary work of multiplying those perspectives in order to bring complexity to a controversial topic. The meaningful speculation they experience in the community dialogue on the future of driving might, in this way, lighten up the otherwise intensely serious work of engaging with difference.

Conclusion

In this chapter, I laid out the key parts and the corresponding rationale I used to design an intentionally-mediated discursive space to change the quality of public talk on the subject, if only locally. My approach relied on community literacy values and user experience principles to realize four key goals: 1) Participants will engage in a conversation without a facilitator; 2) Participants will explore a speculative topic; 3) Participants will engage difference; and 4) Participants will value their experience. Finally, this chapter explained how I designed a computer-mediated conversation about the future of driving to build knowledge with the potential to affect how everyday people come to reason together.

CHAPTER 3

DEVISING THE METHODS

Introduction

This chapter outlines and discusses the research approaches used to undertake, gather data and understand the data generated by this study. The first part (*Procedures*) details the discrete components of the community dialogue and methods of data collection: recruitment procedures, participant selection, and participation (live study, follow up surveys and interviews). The second part (*Analytic Method*) lays out how the resulting data from the study will be analyzed according to qualitative methods, especially grounded theory (Glaser and Strauss, Charmaz; Flower) to code data and to derive a theoretical account of what happened during the dialogue. Additionally, because participants in my study were asked to co-construct an emergent process, one that they may not have had much or any prior experience with, I also take a top-down approach to “track the construction of negotiated meaning within [the] activity” with the goal of understanding how or in what ways participants constructed joint knowledge through which to speculate (build speculative knowledge) about the future of driving (Flower, “Intercultural” 243). To do this I rely on Linda Flower’s theory of negotiation analysis to code the study data for “clusters of conflict” where there seems to be some work that participants are doing together in terms of problem solving. These methods are poised to answer the larger research questions at the heart of this dissertation, which focus both on explicating the deliberative discourse generated by the computer-based tool as well as testing the weight and worth of Burke’s frames to structure productive speculation (via the literate practice of “framing”).

Procedures

In this section I review the recruitment, participant selection and participation criteria that I undertook and enacted.

Recruitment

Upon securing approval from the Arizona State University institutional review board, I recruited participants in two ways. First, through an on-campus campaign, which featured brightly-colored informational flyers placed on bulletin boards in high traffic areas. Secondly, through an email, I composed and sent to a pool of students who had previously completed my English 301, “Writing for the Professions” course. In both cases, students were informed about the topic, the nature of the meeting (small group conversation), and offered a small stipend for their time and participation – a \$25 Amazon Gift card.

Participant Selection

All students who responded positively to the flyer and/or email were invited to participate. This number amounted to a total of eight potential participants. However, only five participants were able to arrive at a suitable time to schedule the 75 minute “small group conversation.” (All participants used the online Doodle tool, which allows individuals to show that they are “available” or “unavailable” during times pre-selected by me as the coordinator.) Therefore, I only de-selected potential participants when it was clear to me that scheduling conflicts required me to choose the time that most participants

had signaled worked best for them. A date and time at the end of March 2015 (from 4:00-5:15 p.m.) was agreed on by all participants.

The five participants included three females, age 21, 22, 28 and two males, age 22, 34. Their respective major and minor degree programs (in order of age) included communication and gender studies (B.S.), global politics (B.S.), chemistry (Ph.D.), literature and psychology (B.A.) and creative writing and justice studies (B.A.).

Participation

The study was held at the student union on campus, the Arizona State University “Changemaker Central” room in a six seat multi-modal enclave that was pre-scheduled. (See Figure 12) When participants arrived, they signed a consent form before sitting at the table. On the table, participants were presented with three kinds of materials: 1) small die-cast toy cars 2) pens and pencils and 3) three discrete stacks of documents clearly labeled: “Use with Step 1,” “Use with Step 2,” and “Use with Step 3.” Participants would have also noted that the large computer monitor displayed the “home screen” or first page of the website, which provided the instructions for the study.



Figure 12: Research Setting (Pilot) – Community Dialogue

Once participants were seated, I gave a few words in introduction, asking that they focus on the goal of having “a good conversation,” and promised to be “out of earshot” for the duration of the live portion of the study. The participants then proceeded to follow the directions on the website.

I stopped the participants’ dialogue when the allotted time had run out. At that time, I interrupted the ongoing dialogue to thank participants and remind them of their follow-up responsibilities with respect to completing the study. These responsibilities included completing a ten-question electronic survey on the following day and completing a delayed follow-up in-person interview within one to two months’ time. After completing these activities, participants would receive their stipends. (See appendix for the IRB protocol, recruitment flyer, and consent forms.)

Data Collection

Data collection proceeded through a multistep process, beginning with the audio and video recording of participants' dialogue about driverless cars (employing the interface described in the previous chapter), continuing with an electronic survey, and ending with follow-up in-person interviews, which were audio recorded.

Electronic Surveys

The web-based platform "Survey Monkey" was used to disseminate the electronic survey to participants. Because the free version of this platform limits researchers to soliciting answers to no more than ten questions, each question was written carefully to target key information including, demographics, motivations for participating, memorable and affective aspects of the experience, learnability and usefulness of both the Burke's frames and the levels of automation, and overall strengths and weaknesses of the interface design.

Follow-up In-person Interviews

When participants were contacted to schedule their individual follow-up in-person interviews, they were given the option of meeting on-campus (in my department office) or at a local Starbucks coffee shop. In either case, each participant responded to a series of ten pre-prepared questions during approximately 20-minute audio recorded sessions. Questions were written to assess the lasting impression of the community dialogue as a whole and regarding Kenneth Burke's frames specifically. Also, the questions inquired

into each participant's sense of the value of such dialogues or "good conversations" and their tools for engaging in such work.

Analytic Method

In this section, I review the two qualitative methodologies I rely on (grounded theory and negotiated meaning-making) to study the emergent process I define as joint knowledge building as it plays out in participant speculation about the future of driving during the "Community Dialogue on the Future of Driving". In both cases, I apply the inductive methods of contemporary grounded theory to better understand my participants' experiences co-constructing this process.

Grounded Theory Analysis

This study uses a grounded theory qualitative methodology to understand and analyze the discursive quality of the "Community Dialogue on the Future of Driving" and the efficacy of Burke's frames to scaffold that talk as reported through follow-up surveys and interviews. The value of this theoretical approach is its focus on accounting for how processes actually work within systems. That is, by following such a systematic approach to coding and analyzing data, researchers rely *only* on themes and patterns that emerge from their data, and thereby trust that their insights demonstrate the characteristics of the process under analysis. The value of utilizing qualitative methods to analyze these events is well articulated by Juliet Corbin and Anselm Strauss who explain that researchers "desire to step beyond the known and enter into the world of the participants, to see the

world from their perspective and in doing so make discoveries that will contribute to the developments of empirical knowledge” (16).

To interpret the process of joint knowledge building, I rely on scholarship including Kathy Charmaz’s “Grounded Theory as Emergent Method” to “learn about the worlds we study and...develop[...] theories to understand them” (10). That is, to produce a theory of the process grounded in data from that process, I follow Charmaz’s attention to social processes:

[The p]rocess consists of unfolding temporal sequences that may have identifiable markers with clear beginnings and endings and benchmarks in between. The temporal sequences are linked in a process and lead to change. Thus, single events are linked as part of the larger whole. (*Constructing* 10)

Charmaz’s analytical method for theorizing processes proceeds in four discrete steps, beginning with *coding* which “consists of at least two phases: initial coding and focused coding” (Charmaz, *Grounded* 163). During the coding process, possible meanings of the data in terms of themes and topics are identified by “sticking closely to the data while actively interrogating them” (163). This phase of coding consists of condensing initial codes into categories in an effort to sort and synthesize the data into “most frequent and/or significant” and “evaluat[ing] which ones best explain or interpret the empirical phenomenon. These codes then become tentative theoretical categories” (164). Codes that “carry the weight of the analysis” or provide “analytic momentum” are valued here (164). The second and third steps of conducting grounded theory analysis consist of *memo writing* and *theoretical sampling*, which serve to systematically interrogate the emergent categories identified in the coding phase. Memo writing specifically “capture[s] ideas in process and in progress. Successive memos on the same category trace its development as the researcher gathers more data to illuminate the category and probes deeper into its

analysis” (166). Theoretic sampling takes memo writing a step further in an effort to “consider[r] all possible theoretical understandings of their data” even “return[ing] to the field and gather[ing] more data to check and refine their categories” (167). The fourth and final step of conducting grounded theory analysis, *theoretical saturation*, occurs when theoretical sampling reaches a saturation point. In other words, when “gathering more data sheds no further light on the properties of their theoretical categor[ies]” and researchers are able to provide evidence “that they have gathered sufficient data to establish the parameters of the category or explicate its properties” the point of theoretical saturation has been reached (167).

In taking up the research paradigm of grounded theory qualitative analysis, I aim to rely on a grounded coding scheme by following the four-step process outlined above to answer two of the four major questions driving this dissertation study:

- 1) When successful, what does the deliberative discourse that participants construct together using look like and do?**
- 2) What do data from participants’ use of the tool suggest about the efficacy of Burke’s frames to structure new kinds of public talk?**
- 3) What kind or kinds of knowledge does this discourse construct?
- 4) From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces?

Negotiation Analysis

Participants who took part in my study were asked to co-construct an emergent process, one that they may not have had much or any prior experience with. Therefore, not surprisingly, initial coding revealed that “conflict” or “hubs of negotiation” were a defining feature of the process I was trying to better understand. Theorizing why this would be so led me to value and use Linda Flower’s account of a more generic process that she calls the *social construction of negotiated meaning-making*.

In *The Construction of Negotiated Meaning: A Social Cognitive Theory of Writing*, Linda Flower details the negotiation practices of “college students, urban youth and community members”, who she observed in acts of writing and collaborative inquiry” (Flower, “Intercultural” 243; Flower 1994; Flower, Long and Higgins 2000; Flower and Deems 2002). Her goal in doing this work was to develop “social cognitive accounts of how individual students—as thinking personal agents operating within and shaped by a social and cultural fabric—learn. And why they do not learn. What makes literate action possible for some, unlikely for others?” (Flower, *Construction* 33). To account for the different meanings or personal representations individuals construct and “also walk away with” from the same contexts, Flower’s method of social cognitive rhetoric “track[s] the construction of negotiated meanings within a system” (Flower, “Intercultural” 243). The crux of the methodology is the notion that “*conflicts* shape meaning-making as writers or collaborative partners manage the tensions and conflicts among the multiple forces voices or forms of knowledge” that “shape meaning: the social and cultural context, the demands of discourse, and the writer's own goals and knowledge” (Flower, “Intercultural” 243; *Construction* 63).

Both in individual and collaborative writing situations, as well as in live think tanks, Flower's negotiation theory helps scholars attend to, systematically account for and track the competing voices that rhetors negotiate as they "deliberate over interpretations of a shared problem," or work to "transform conventional practices (such as [in] a training program for new hires) into inventive and purposeful literate action" (Long, "Rhetorical Techne" 31). When participants speak up or "go public" with their opinions or interpretations in these public spaces, what is happening behind-the-scenes? Negotiation theory, as an "observation-based account of literate action, offers a plausible explanation of how socially situated individuals make difficult decisions in the face of multiple, internalized competing public voices" (31). In the case of a think tank on workplace issues, a situation similar to my "Community Dialogue on the Future of Driving" in that participants are tasked to engage with one another to better understand the problem of focus, the interplay of voices (live and internalized) could be valued and observed as an aspect of analysis:

The conflicts that matter—those that have the potential to shape problem representations—are the ones that people actually attend to as "live options" These voices include "the *live* voices" of those at the think tank roundtable and also "the *internal* voices of personal intention, knowledge and emotion, and the *internalized* dictates of convention, language, and ideology" (Flower, "Intercultural" 243).

Also of key importance is the fact that "negotiation analysis can deepen our insight into situated knowledge making" (Flower, "Intercultural" 243) to reveal local knowledge; "the hidden logic of often unspoken motives, values, and assumptions that people use to interpret complex situations" (Long, "Rhetorical Techne" 23). "Negotiation lets people build more robust representations of the problem and consequently draw on these revised,

enhanced understandings should similar situations arise for them in the future” (Long, “Rhetorical *Techné*” 31).

To tune into this constructive process of *negotiation*, Flower argues that we can use “negotiation” and “conflict” as theoretical terms whose features can be “named, identified, and made operational for the purpose of rhetorical analysis and theory building” (Long, “Rhetorical *Techné*” 31; cf. Flower, *Construction* 55). To understand how or in what ways participants constructed joint knowledge through which to speculate (build speculative knowledge) about the future of driving, I code the study data for “clusters of conflict” or “hubs of negotiation” where there seems to be some work that participants are doing together in terms of problem solving. By focusing purposefully on places in the transcript where participants are negotiating conflict, I will be able to more fully account for ways that the community dialogue may have affected how participants drew on their own situated knowledge to engage in conversation without a facilitator, explore the speculative topic of the future of driving, engage difference, and leave with more than they came in with. The patterns and themes that are revealed by this grounded coding scheme will be used to answer one of the four major questions driving this study (#3 below):

- 1) When successful, what does the deliberative discourse that participants construct together using look like and do?
- 2) What do data from participants’ use of the tool suggest about the efficacy of Burke’s frames to structure new kinds of public talk?
- 3) **What kind or kinds of knowledge does this discourse construct?**

- 4) From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces?

Finally, the fourth research question will be addressed with the data interpreted from both methods discussed in this chapter.

CHAPTER 4

ANALYZING THE RESULTS OF THE COMMUNITY DIALOGUE

This chapter has three main sections. First, I contextualize this chapter's value in terms of focusing squarely on the character of the deliberative discourse participants co-constructed during the community dialogue. Then, I outline the emergent features of the community dialogue by using grounded coding to characterize the speculative, deliberative discourse that the participants constructed together against the backdrop of the four goals I had for the interface I designed. Finally, I conclude this chapter by explaining what the data has to say about the co-construction of computer-mediated speculative discourse among strangers.

Contextualizing this Chapter's Purpose: Participants Co-Constructing Deliberative Discourse

This chapter presents emergent features of the community dialogue for the purpose of answering the first of this project's larger research questions:

- 1) **When successful, what does the deliberative discourse that participants construct together using look like and do?**
- 2) What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk?
- 3) What kind or kinds of knowledge does this discourse construct?
- 4) From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces?

In order to answer this question, this chapter’s findings describe the discursive nature of the community dialogue at large according to major emergent themes in the data. As discussed in the previous chapter, my methods coded for possible meanings of the data in terms of themes and topics that arose from “sticking closely to the data while actively interrogating them” (Charmaz, *Grounded* 163). From these themes and topics, I identified four larger design features (listed below), which serve to answer the first part of the first question (When successful, what does the deliberative discourse that participants construct together using this tool look like and do?):

- 1) Participants will engage in a conversation without a facilitator;
- 2) Participants will explore a speculative topic;
- 3) Participants will engage difference; and
- 4) Participants will leave with more than they came in with (value their experience).

Prior research on deliberative discourse allowed me to name these design features for participants engaging in speculative, multi-perspectival, productive deliberation together. This research also, as I mentioned in Chapter 2, informed my decision to test the interface’s capacity to provide scaffolding for purposeful talk without a facilitator, especially given that the topic of driverless cars is itself a test of how much we can benefit from technology. But what I didn’t know—what I wanted to find out—is what *in particular* participants did or would need *to do* over time in order for their talk together to constitute discourse that achieved these distinctive features of speculative deliberation. So the analysis that follows identifies distinctive features in the dialogue in order to show

what the speculative deliberative discourse that participants constructed together using this tool *looked like* and *did* (Question 1).

Co-Constructing Distinctive Features of the Community Dialogue

This section characterizes the speculative, deliberative discourse that the participants constructed together against the backdrop of the four goals I had for the interface I designed. The community dialogue was a live event that occurred on Friday, August 15, 2014 for 75 minutes. The audio recorded data was transcribed and encoded, yielding 50 pages of printed text. Participants moved through the three sequential steps of the community dialogue within the allotted time, spending 16 minutes (11 pages) on *Step 1*, 34 minutes (24 pages) on *Step 2*, and 25 minutes (15 pages) on *Step 3*. Using the methods discussed in the previous chapter, I coded the data for themes and topics, which I distinguished through tentative theoretical categories, memo writing and theoretical sampling before reaching a theoretical saturation point where it was clear that I had “establish[ed] the parameters of the category[ied] or explicat[ed their] properties” (Charmaz, *Grounded* 167). This process revealed features with respect to the four larger design goals: 1) Participants will engage in a conversation without a facilitator, 2) Participants will explore a speculative topic, 3) Participants will engage difference, and 4) Participants will leave with more than they came in with (value their experience). Importantly, this section serves as an overview to demonstrate the deliberative discourse that participants co-constructed speculating on the future of driverless cars.

Co-Constructing a Way to Talk Together: The Beginning, Middle and End of the Community Dialogue (Steps 1, 2 and 3)

The dialogue began with the facilitator (me) welcoming participants and explaining that their goal in completing the study to “have a good conversation.” I also specifically asked that they “follow the instructions on the computer interface and use the corresponding material provided” to complete the study because I would not be “in earshot” to help them along (1).

Below I detail the deliberative discourse that participants constructed together using my computer interface.

Participants Engage in a Conversation Without a Facilitator

Given the goal that the participants would find their own ways to engage in this speculative, deliberative talk without a facilitator, it is appropriate to report on how participants managed this constraint. Through grounded coding, I discovered evidence of participants’ engagement, and this evidence informs my framework for recognizing how and/or when participants successfully co-constructed a way of talking together deliberatively—that is, speculating together about driverless cars. Below, I characterize this evidence-based framework. As Table 2 suggests, this analysis allowed me to ask: What does it mean that participants engaged in conversation without a facilitator? What were they doing? Well, according to the data, meeting this goal—achieving this design feature—meant that everyone talks, that participants could get back on track, that they sought information when needed, and that they co-constructed the apparent intent of the interface.

Table 2: Portrait of First Major Design Feature According to Data

Participants engage in a conversation without a facilitator.	<ol style="list-style-type: none"> 1. Everyone talks (turn taking) 2. They get back on track when they've gone off track 3. They seek information when needed 4. They co-construct what the interface seems to want from them
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Everyone talks (turn taking). During conversation initialization in Step 1 – as participants are asked to free write in response to the larger question: What do you think about driverless cars? – the theme of *everyone talks* was most obvious as all five participants took turns as they shared aloud what they had written about driverless cars. For example, after the writing period, Charlie, was the first to speak; He asked “Who wants to pop in?” Molly answered this call and provided her point of view, then the others (Matilda, Charlie, Arthur and Samantha) followed suit. Subsequent to this introductory conversation thread, a second conversation thread begins whereby Samantha and the others engage in a back-and-forth style of conversation that meanders away from the prompt. This pattern is consistent throughout the three steps of the dialogue, suggesting that participants seemed to share responsibility for co-constructing this unfamiliar way of talking together. Evidence of this claim is data showing everyone chipping in to get the conversation up and running.

They get back on track when they've gone off track. The pattern of structured/prompted sharing giving way to more responsive conversation showed that participants did not lose sight of the larger study goal – to have a good conversation. In fact, they managed to go off track to share unprompted thoughts and feelings and then to

use the interface prompts to get back on track several times over the course of the dialogue. For example, during Step 1 of the dialogue, just after all of the participants shared their initial ideas and everyone took some time to build on ideas and introduce new ones – a part that continues for approximately five pages of transcribed text – participants seemed to reach a natural stopping point, which Charlie acknowledges by asking “Shall we go to the next one?” (11).

Participants seek information when needed. As the participants move on to Step 2 in the dialogue, they are tasked with familiarizing themselves both with the frames and the interface features. This added complexity shows the participants seeking information in two ways as they manage the conversation without a facilitator. For example, as participants are working to understand what an epic frame might entail, they, Molly and Charlie especially, begin clicking between links to look for more information. However, they quickly realize that there is repetition in the interface: “Okay so this... these quotes are also saying the same thing.” Although Molly and Charlie did not find what they were looking for, the fact that they sought information that they felt they needed demonstrates their ability to engage in the conversation without a secondary leader in the role of official facilitator.

They co-construct what the interface seems to want from them. During Step 2, the final feature of the larger theme – participants engage in a conversation without a facilitator – surfaces as participants demonstrate the ability to co-construct what is asked of them. For example, after seeking information within the interface to better understand

the epic frame, Charlie realizes a bigger problem: “you know what, we’re somewhat ignoring the questions here, as well. I think they’re probably meant to evoke discussion”. This realization helps Charlie and others return to and circulate specific questions as the dialogue goes on, questions like “How can cars be satiric?” (24). This strategy proves valuable in Step 3 also as participants articulate answers to the automation-specific scenarios by reading the question prompts aloud (i.e., “What would it look like in each frame?” (38)). In this way, the frames act as touchstones that participants reach back to and circulate throughout the dialogue.

Because participants were not following the lead of a facilitator who might have helped them explore the topic, they were required to interpret my directions to “have a good conversation” in the context of the computer-based tool on their own terms. It is clear from the transcript that participants managed this responsibility in the discrete ways detailed above. Moreover, this co-construction launched what for this group would constitute speculative deliberation.

Next I document what participants did together to explore a speculative topic.

Participants Explore a Speculative Topic

Participants were tasked to speculate about the future of driving in specific ways as they moved through the three steps of the dialogue. Through grounded coding, I discovered evidence of participants speculating, and this evidence informs my framework for recognizing how and/or when participants successfully co-constructed a way of talking together deliberatively—that is, speculating together about driverless cars. Below, I characterize this evidence-based framework. As Table 3 suggests, this analysis allowed me to ask: What does it mean that participants explored a speculative topic? What were

they doing? Well, according to the data, meeting this goal—achieving this design feature—meant that participants drew on their own understanding to comment on the unknown, that they identified interrelated issues that may arise as a result of the future states, and they articulated new future-oriented, imaginative possibilities and limits.

Table 3: Portrait of Second Major Design Feature According to Data

<p>Participants explore a speculative topic.</p>	<ol style="list-style-type: none"> 1. They draw on their own understanding to <i>comment</i> on the unknown 2. They identify interrelated issues that will/can/should arise as a result of the future states 3. They articulate new future-oriented, imaginative possibilities and limits
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They draw on their own understanding to comment on the unknown. Certainly from Step 1 of the dialogue, participants draw from their own situated understandings to provide an initial statement to their peers in response to the prompt: What do you think about driverless cars? These comments are highly speculative, as some, like Molly, are quick to point out: “I think there’s great potential... But I haven’t researched this enough to know pros and cons in an educated and informed way to make a judgment call” (1). More significantly, during Step 2, participants are working to understand and interpret the frames, one by one, by calling up definitions from their unique contexts. For example, Arthur, who we know to be a literature major, characterizes the elegy frame by referencing two genres we might assume he’s familiar - “Elegy, isn’t it a poem or a song that is sung or written, uh, in honor of somebody who’s dead, or something that’s passed on?” – before articulating a way that cars could be elegiac: “with the onset of the driverless car, many things will pass away” (16). Others follow the same pattern as Step 2

goes on by citing examples of movies (“Monty Python and the Holy Grail” (24), “Hot Tub Time Machine 2” (23), “Kirby Fully Loaded” (25)) or cultural icons/artifacts (“Dena Montes” (29), “Starbucks” (21)) that provide context for drawing similarities and inferences about the frames. As Molly’s and Arthur’s examples show, participants are able to draw upon on their unique situated knowledge – knowns from their lived lives – to gain access to the unknown future of driving.

They identify interrelated issues that will/can/should arise as a result of the future states. Beyond the somewhat basic one-to-one metaphoric connections participants cited to help them imagine the unknown (the frames and the future of driving), participants also identified complex relationships and interrelated issues regarding to the future of driving throughout the course of the dialogue. For example, in Step 1, Matilda details a possible future entailment in terms of how the “transition [to more technologized transportation] *might*” go. In doing so, she identifies a larger context that may be affected:

technology, it would need to be very advanced in terms of being acceptable in society, right, like obviously...talking about the number of accidents. And it isn’t just an onboard issue. It would take time. So then, transition might be well to start with public transportation, rather than single households having this technology. (8)

A more focused example of this theme occurs in Step 2, just after the participants discuss the elegiac frame, and they begin considering examples of what might be lost in a highly technologized driving future. Arthur suggests that one important loss “happens when you take the driver out of the equation” (19). This train of thought brings with it a list of interrelated issues that include “[a] person’s property,” “public goods,” “control”,

“inventing public infrastructure”, “public transit authority”, “who pays for a ticket if [that] car is now... in a no-parking zone?”, “less responsibility and less accountability” (20).

These connections show participants recognizing and articulating future driving possibilities that are grounded in real-to-life complexities.

They articulate new future-oriented, imaginative possibilities and limits. With the help of the frames in Step 2, the participants are able to disconnect from heavier topics and their issues to articulate new imaginative possibilities and limits related to the future of driving. For example, while exploring the satire frame, Molly suggests that “for anything to be satiric, it has to have... truth, but there’s humor and personality” (25), which prompts, Samantha to suggest a satirical driving future: “I’m sure [a driverless car] could be programed to have a button that you press and [it] does stupid things... like maybe zig-zag back and forth on the highway, but it’s all like within the law” (25). Molly doesn’t agree with Samantha’s suggestion and offers another, but in any case, this example shows an imaginative and playful speculation that is *new* and prompted by the constraints (frames) of the dialogue. Another example happens in Step 3, when Arthur articulates a framed and automation sensitive, new driving future that includes cars that can make emotional decisions for passengers:

I imagine, uh, one way that you could combine, uh, tragic frame, with something like full self-driving, uh, I... I can imagine people at work entirely uncreative, they might say, “car, uh, take me somewhere that a road trip would be good”. You know, I ... they don’t ... they can’t formulate a, uh, a road trip by themselves. So they say, “car make me happy. Take us on a road trip. (x)

Arthur’s example points us to the discrete components of speculation or speculative design, which as Di Salvo explains, “works by isolating facets of culture and recasting

those facets in ways that alter their meaning in order to produce new images — new imaginative instantiations — of what might be” (“Spectacles” 111). Given that participants do not articulate new or imaginative instantiations before Step 3, it could be said that participants work up to these ideas by first activating their situated knowledge to identify knowns, before creating more realistically-detailed contexts with the help of the frames and finally, using the frames to dramatize new versions of the future of driving. It is clear from the transcript that these features characterized the ways participants explored a speculative topic during the dialogue.

Next I document the third design feature in action: what participants were doing when they engaged difference.

Participants Engage Difference

Beginning in Step 2, participants are tasked to interpret and make use of the frames, an activity that requires that they do the work of rivaling: “bring additional perspectives to the table by generating rival hypotheses – alternative interpretations, possible solutions – and to then test those hypotheses by considering possible rivals to them” and “rival their *own* ideas” (Flower, *Community* 49). Given that the participants were tasked to “expand rather than narrow potential interpretations” of the future of driving in specific ways as they moved through the Steps 2 and 3 of the dialogue, I discovered evidence of participants engaging difference, and this evidence informs my framework for recognizing how and/or when participants successfully co-constructed a way of talking together deliberately—that is, speculating together about driverless cars (Higgins, Long and Flower 24).

Below, I characterize this evidence-based framework. As Table 4 suggests, this analysis allowed me to ask: What does it mean that participants engaged difference? What were they doing? Well, according to the data, meeting this goal—achieving this design feature—meant that participants pooled their situated knowledge to *make meaning* (interpret/define), and they worked together to negotiate multiple meanings, deepening and expanding their discussion (integrate/synthesize).

Table 4: Portrait of Third Major Design Feature According to Data

<p>Participants engage difference.</p>	<ol style="list-style-type: none"> 1. They pool their situated knowledge to <i>make meaning</i> (interpret/define) 2. They work together to negotiate multiple meanings, deepening and expanding their discussion (integrate/synthesize)
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They pool their situated knowledge to make meaning (interpret/define). Previous to Step 2, participants were focused on sharing their ideas – not understanding new ideas or interpreting the array of frames. When faced with each of the frames, and the accompanying information provided by the interface and the printed documents, they began to draw from their own understanding to venture guesses about what the frames might mean. For example, in the excerpt below, the participants begin to consider the epic frame. Charlie initiates this conversation by focusing on the text he has read on the back of the epic frame (“Driverless car technology has the very real potential to save millions from death and injury and eliminate hundreds of billions of dollars of costs.... (Moi, *Forbes*). Interestingly, Charlie agrees that the text reads as epic to him, but he is unsure why. He ventures a guess, but then concedes by saying ‘I don’t know’. Molly and Matilda answer by focusing on textual evidence of that might account for the epic-ness

inherent in the quote: large amounts (“hundreds of billions and millions...”) heft (“words like ‘massive,’ ‘eliminated’”). Afterwards, Arthur and Samantha weigh in from different angles to bring and test additional perspectives:

- Charlie: “this, uh, quote is what the epic is like to me. Is it just because of the amount of money? Or the ... and the depth, do you think. That's interesting. I don't know.”
- Molly: “It's probably the verbiage, too. The verbiage is in like hundreds of billions and millions...”
- Matilda: “You're seeing words like “massive,” “eliminated,” and, uh, “lead developers”, things like that. Just ...”
- Arthur: “You know, originally epics were sort of religious documents and I think this reflects all ... it's almost like transforming the world, it's like ascending to a higher, uh, plane of existence where these traffic deaths don't happen. So world transforming, it's like the end of death.”
- Samantha: (laughing) I think for a car to be epic, it would have a sense of humor.
- Charlie: with the way epic is thrown around colloquially now, it's not a...
- Samantha: oh, yeah, yeah, yeah.
- Charlie: ...the connotation. (13-14)

In this case – and others coded as moments when participants pool their situated knowledge to make meaning (interpret/define) – participants go no further to build upon the ideas presented. Instead, they construct meaning by pooling juxtaposing evidence and – as Charlie states when he says, “with the way epic is thrown around colloquially now” – recognizing that the term is actually quite complex, meaning that the term “epic” could mean something different for different people. It seems here that participants are immersed in a dynamic problem space where nominated ideas are tested, interpreted, critiqued and ultimately thrown out as no consensus is arrived at. Instead, participants move on to the subsequent frame.

They work together to negotiate multiple meanings, deepening and expanding their discussion (integrate/synthesize). It isn't until page 29 of the transcript's 50 pages or the end of Step 2 that participants start to show signs of going beyond pooling their knowledge. Here, one person after another adds a new detail, brainstorming to create a fuller sense of what the frame might mean – to deepen and expand their discussion by integrating the multiple meanings they've circulated a few times over the course of the dialogue. For example, in the excerpt below, the participants discuss the burlesque frame before Arthur takes a stab at a fuller picture. Then, Charlie does the same in his own way:

Charlie: What is burlesque? And everyone, what is our consensus?
Matilda: I ...
Molly: In a sense, to me, it means like scandalous. Like if you think of ...
Samantha: I would go with that.
Matilda: Yeah.
Charlie: Scandal with a wink. Yes.
Samantha: Just showy.
Molly: A little bit, yeah.
Charlie: Dena Montes. I always think Dena Montes, like when I think burlesque.
Samantha: Showy, very showy.
Molly: Sure. Mm-hmm.
Charlie: Like the showing, but never showing it all.
Molly: Sure.
Samantha: Kind of like attention-seeking?
Molly: It's not really bad, but it's not probably something good, either. Like I don't know. Something of a scandal.
Arthur: Burlesque, uh, I'm not sure, uh, but I think it's a genre of literature, as far as I'm aware. Uh, uh, it's ... it's, uh, very candid about vulgar things. And it might have vulgar language.
Molly: Uh-hmm.
Arthur: Just like we saw that, uh, like the truck with the huge testicles, you know. Uh, it's very, very in-your-face about its, uh, its making.
....
Molly, Samantha: Yeah.

Charlie: I feel like burlesque is ... I know ... I know burlesque novels, but I'm almost like that's almost a ... a manipulation of or perversion of the original term. Because I know what you're talking about as well and that is burlesque. But [Inaudible 00:44:40] burlesque novels. But burlesque in itself is always more of a subtle, or was definitely risqué, but it was risqué with taste, so to speak. (31)

Arthur's move to draw on the images provided by the interface (i.e., "Just like we saw that, uh, like the truck with the huge testicles") shows him using the shared referent to arrive at a cohesive understanding. Charlie builds on Arthur's ideas further to add complexity and continue to negotiate, deepen and expand the discussion of the burlesque frame. In a few other cases, during Step 3, participants do similar work. For example, after participants responded to the first scenario (by pooling their situated knowledge), Charlie integrates the ideas by suggesting that their ideas fit into one of two frames:

Arthur: (reading) It happened. You were driving along just fine until traffic suddenly came to a standstill. There's no way to tell what caused the traffic jam. It could be an accident, construction, gridlock or driving, a broken traffic light or any number of things. One thing is clear, you're not going to very far, but why. Okay. What might getting stuck in traffic in a combined function automated vehicle look like in each frame?

Arthur, Charlie: Okay.

Samantha: So you're trapped. Satire. You're not getting out. (Laughing). You're trapped in that car. What if it locks the doors and says, it is unsafe to leave the vehicle. (Laughing)

Charlie: Like being stuck on the tarmac.

Molly: Mm-hmm. Mm-hmm.

Samantha: Yeah.

Charlie: There's nothing you can do.

Samantha: Oh, my gosh. Yes. It's terrifying.

Matilda: Which "Avengers" movie was it? Or was it like "Captain America" or something, where, um, the

guy with the eye patch was stuck in the car and he was getting like all these problems with the car.

Charlie: Oh, yeah.

Matilda: And the only thing that was left working was the AC or something? Yeah. I don't know.

Charlie: It was the "Avengers" movie. It wasn't even there's ... yeah, it's frustrating. All the technology in, that's just pretty much ...

Molly: Yeah, the only thing that's still working after all the bombs.

Charlie: Your car has been damaged. Your car has been damaged. Please say in place.

Molly: Yeah.

Matilda, Samantha: Yeah, yeah.

Samantha: Or I remember that coin car from, um, "Fifth Element" ...

Charlie, Molly: Yeah.

Samantha: You have one point left on your license. Tears off. (Laughing).

Molly: Right.

Charlie: So I mean, I guess.... So I mean, I guess that falls into satire and comic, almost more than ... (38).

In the case above, participants are not able to articulate more than two framed responses to the scenario (satire/comic and epic). However, as participants move through Step 3, they show an increased ability to arrive at multiple framed readings (more than two) specifically about the future of driving. In the truncated example below, we can first see Charlie instigating more variation in their responses to the first scenario (i.e., "I don't know how tragic would fit or elegy.") to which Arthur eventually responds:

Charlie: So I think it's ... I think it's ... well, I mean, with this example, then, we'll see the epic side of it. (42).

...

Charlie: That might be more ... I don't know how tragic would fit or elegy. (43)

...

Arthur: Well, combined function may be you would ... you would still have a certain amount of, uh, of manual driving. So you would still be reminded of that. It

would be like, oh, I miss being able to drive all the way. (43-44)

Samantha: Uh-huh.

Arthur: Uh, or something like that. So I think that would be ... there would be a certain amount of nostalgia there.

Samantha: Okay.

Arthur: So that would be elegiac, tragic....

Charlie: Hmm. (43)

The examples in this section point us to the discrete components of deliberation, and we can see the participants working together to negotiate and integrate multiple meanings to arrive at more complex versions of the future of driving. It is clear from the transcript that these features characterized the ways participants engaged difference during the dialogue.

Participants Leave with More Than They Came in with (Value Their Experience)

Given that the participants were tasked to interact with others during the community dialogue, articulate framed versions of the future of driving (by Step 2) and integrate variations in scenarios based on different levels of automation (by Step 3), it is important to consider what participants took with them from their experience. Through grounded coding, I discovered evidence that participants left with more than they came in with, and this evidence informs my framework for recognizing how and/or when participants successfully co-constructed a way of talking together deliberatively—that is, speculating together about driverless cars. Below, I characterize this evidence-based framework. As Table 5 suggests, this analysis allowed me to ask: What does it mean that participants left with more than they came in with? What were they doing? Well, according to the data, meeting this goal—achieving this design feature—meant that

participants built more complex and domain-specific understanding, and they gained a deeper sense of their own and different perspectives.

Table 5: Portrait of Forth Major Design Feature According to Data

Participants leave with more than they came in with.	<ol style="list-style-type: none"> 1. They build more complex and domain-specific understanding 2. They gain a deeper sense of their own and different perspectives
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They build more complex and domain-specific understanding. After the participants read the first scenario (“Stuck in Traffic”), they almost immediately realize that they needed to discuss and incorporate the levels of automation into their framed answers even though they were not familiar with the terminology: no-automation, limited-function automation, combined-function automation, and fully automated. In the excerpt below, Charlie clearly articulates a lack of domain-specific knowledge. Afterwards, Arthur directs Charlie (and the others no doubt) to the information embedded in the interface, and they are able to build more complexity into their framed responses:

Charlie: the car. But I don't know what the car does or doesn't do...

Arthur: Did you see this here? (reading) Consider how watching the road and working a steering wheel and the brake have been changed dramatically.

Charlie: Oh, and the ... use this link to prompt your thinking of the frames and levels. Just like that. (42)

Charlie: It could get epically frustrating. Just like it is now.

Molly: hmmm. I know.

Charlie: I mean, we lived for six years in Southern California.

Molly, Samantha: Oh, man.

Charlie: I'd rarely had road rage in my life.
Molly: You're kidding.
Charlie: And just the futility of it all was the road rage, there's no one to get mad at but myself. There's nothing you could do.
Molly: Yeah, yeah, yeah, yeah.
Charlie: So I think it's ... I think it's ... well, I mean, with this example, then, we'll see the epic side of it. I can understand how it falls in there now. So how would it ... how would that be in these particular settings?
Molly: Mm-hmm.
Charlie: Like running errands? I think it would obviously have a more epic impact in limited self-driving as opposed to combined function, which I don't think is ... (42-43).
Samantha: Yes. Combined ...
Charlie: as remarkable.
Samantha: Right. Function just adds to your to-do list and you have to like tell the car, okay, now, you drive yourself. Oh ...
Molly: Right, right, right.
Samantha: now I have to intervene.
Molly: Mm-hmm.
Samantha: Great. I was about to pay my bill and now I have to drive for a little bit. (43)

Note that participants do not circulate particularly specific information regarding the distinctions of combined-function automation. Instead, they arrive at a distilled and critical understanding that erases or ignores convenience. That is, a new kind of “to-do” list is manifest as a result of the advanced technology, which is not as “remarkable”, but may be instead a point of contention or nuisance (i.e., “Function just adds to your to-do list and you have to like tell the car, okay, now, you drive yourself.”). I would argue that this evidence suggests that participants are identifying – even on the surface-level – distinctions that demonstrate the discrete differences between the levels of automation, and lay the ground work for future understanding, which makes this data valuable for understanding what participants might have taken with them from the experience of the

community dialogue.

They gain a deeper sense of their own and different perspective. In the next, extended excerpt, participants demonstrate the most fluency with framing and domain-specific knowledge (i.e., levels of automation). The excerpt begins with the participants responding critically to the “Going on a Road Trip” scenario in the context of a limited-automation vehicle. Arthur begins by explaining that the experience of asking the car to “just drive” might be “less romantic” and the participants agree by qualifying “less romantic” experiences they have with technology in terms of managing interruption and misunderstanding. Then the conversation turns as the participants work to identify different perspectives both in terms of frames and levels of automation:

Arthur: There’s that whole activity of ... of, uh, sort of lonely souls. They say, I’m just going to go out on the road and drive. I’m just going to drive. And I imagine you could tell your car, uh, just, just drive. But I think there would be a less ... less of a romantic, uh ...

Molly: Mm-hmm.

Arthur: edge to that.

Charlie: Every 15 minutes, like when you're watching Netflix and you haven't paid attention and ...

Molly: Are you still listening?

Charlie: am I still watching, or Pandora? Or ...

All: Yeah. Yeah.

Charlie: Are you still listening?

All: Yeah.

Charlie: Are you still wanting to drive?

Molly: Or the amount of frustration, like when you're talking to Siri, and you say like where is the closest Target? And she goes, “I cannot find, like laundry detergent on your to-do list”. (Laughing) If that would have happened with your car, and it takes you to the wrong spot or cannot find where you're going.

...

Molly: And **that may be more comic**, too. Along the lines of if you're in a ... **a self-driving vehicle** on a road trip with your family and you have nothing to distract you from each other ...

Samantha: Mm-hmm.

Molly: would that be good or bad?

Samantha: Yeah.

Molly: Would it make road trips better or worse?

Matilda: All these underlying resentments and everything.

Samantha: Right, yup.

Charlie: **I can definitely see that.**

Samantha: Yes.

Charlie: And even satire.

Molly: Mm-hmm.

Charlie: **I can see satire and elegy** kind of played into the scenario we're talking about, as well. Like [Inaudible 01:01:49]. **I can see epic**, you know, because the ... the lonesome road, you know, the adventure of it.

Molly: Sure.

Charlie: But I think that would play more on a **combined function** where you would have more control and could make decisions and have that, as opposed to ...

Molly: Yeah, yeah, yeah.

Charlie: the **limited self-** kind of takes out that guessing and that adventure aspect of it, to some extent.

Samantha: **It could be epic** in terms of, um, your car now has its own personality.

...

Molly: “No, you're wrong.” (mimicking the voice of the car)

Samantha: Yeah, yeah. Yeah.

Matilda: “You don't know what you're talking about.” (mimicking the voice of the car)

Samantha: That would be epic.

Charlie: “I want to go to the car museum.”

Molly: Yes.

Samantha: See its own kind. Get depressed. Yeah.

The examples participants invoke in the above excerpt point us to how they may be constructing their understandings of “driverless cars”—understandings participants would have gained through dialogue, might have taken from the dialogue, and possibly

recognized as valuable. Here participants work together to build more complex and domain-specific understanding to utilize the levels of automation in response to the scenarios. They also gain a deeper sense of their own and different perspectives as they articulated new framed readings and automation-specific distinctions. The last example in particular shows the participants drawing on their situated knowledge to use the frames to create new understanding. It is clear from the transcript that these features characterized the ways that participants left the dialogue with more than they came in with.

What's This all Mean?

In this chapter, I analyzed the discrete components of deliberation to note the ways in which the participants worked together to negotiate and integrate multiple meanings and arrive at more complex versions of the future of driving. What this analysis drives home is how darn hard people have to work, how inventive is this co-construction, and how valuable folks' repertoires and cultural knowledge are when pressed toward the service of shared inquiry. This level of detail suggests that the co-construction of computer-mediated speculative discourse among strangers is messy and slippery; without advancing to Steps 2 and three where the participants encountered the frames of acceptance and rejection and the domain knowledge about driverless cars embedded in the scenarios they responded to, participants would not have shown signs of engaging difference or leaving with more than they came in with. This finding gives credence to the argument that literate practices such as framing help participants to co-construct deliberative discourse about such controversial and speculative topics as the future of driving.

In the next chapter, I explore the electronic survey and follow-up in-person interview data I collected in order to understand how the participants named the frames for themselves and talked about their experience in their community dialogue. This data will answer this study's second question:

- 1) When successful, what does the deliberative discourse that participants construct together using this tool look like and do?
- 2) **What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk?**
- 3) What kind or kinds of knowledge does this discourse construct?
- 4) From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces?

CHAPTER 5

ANALYZING THE RESULTS OF PARTICIPANTS' ASSESSMENTS

This chapter has three main sections. First, I contextualize this chapter's purpose in terms of valuing participants' feedback regarding their use and perceptions of the frames as well as their impressions of their experience participating in the community dialogue. Then, I rely on the survey and interview data I gathered to gauge how the participants understood the frames and named them for themselves. Finally, I draw once again on the survey and interview data to explore what participants had to say about their experience in the public talk that was not specifically about the frames.

Contextualizing this Chapter's Purpose: Participants Assessing their Experience

This chapter presents data from the follow-up surveys and in-person interviews for the purpose of answering one of this project's larger research questions:

- 1) When successful, what does the deliberative discourse that participants construct together using this tool look like and do?
- 2) **What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk?**
- 3) What kind or kinds of knowledge does this discourse construct?
- 4) From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces?

In order answer this question, this chapter's findings describe the participants' assessments of the community dialogue according to major emergent themes in the data.

Consistent with Chapter 5, my methods coded for possible meanings of the data in terms of themes and topics that arose from “sticking closely to the data while actively interrogating them” (Charmaz, *Grounded* 163). From these themes and topics, I identified key ways participants make use of and make reference to the tool (Burke’s frames) for directed and undirected purposes and experience “a new kind of public talk”, which contrasts with more familiar versions of public talk that participants are familiar with.

Considering Participants’ Assessments

This section reports the findings of the follow-up surveys and in-person interviews completed by participants. Each assessment instrument was designed and administered differently to understand how participants made use of and referenced the tool (Burke’s frames) (especially in the electronic survey) and experienced a new kind of public talk (especially in the follow-up interview), which contrasts with other kinds of public talk participants are familiar with.

Electronic Survey

The electronic survey was emailed to participants on the morning following the community dialogue. All five participants completed the survey by the afternoon on the same day by answering most of the ten questions in full. The questions that participants responded to gathered their personal information (i.e., *What is your major? What motivated you to participate in the public talk?*), their overall impression of the experience (i.e., *What was most memorable...? Did you find yourself thinking differently...?*), their sense of the success of the design (i.e., *To what extent do you feel*

you and your fellow participants were able to discuss the levels of automation given the amount of information that was available on the interface and what you arrived with?), their ability to apply the frames (i.e., Please categorize the following quotes (from comments to online newspaper articles about driverless cars) into frames.), their sense of the usefulness of the frames (i.e., What is your impression of the usefulness of the six frames of acceptance and rejection?), and their sense of analogous connection (i.e., Can you liken the experience of participating in the community dialogue to participating in anything else?). The electronic survey data was compiled and subjected to grounded coding and yielded one document with 12 pages of printed text.

Follow-up Interviews

The follow-up interviews were audio recorded and took place approximately two months after the community dialogue in two locations: my campus office and at a close-by Starbucks Coffee house. Participants each responded to a series of pre-prepared questions designed to elicit reflection (i.e., *What was memorable? Surprising?*), speculation (i.e., *What were the goals of the public talk?*), analysis (i.e., *What do you think about the concept of public talks? What do good conversations look like?*) and analogous connections (*The six frames I use in the “public talk” are meant to catalyze and scaffold multiple perspectives about the topic (the future of driving). Certainly they are not perfect, but can you think of a tool that you use to do the same kind of work for yourself or with others?*). Each interview lasted for approximately 20 minutes. The audio recorded data was transcribed and subjected to grounded coding and yielded 5 separate documents with 6-14 pages of printed text.

Ways Participants Made Use of and Referenced the Tool (Burke’s Frames)

In this section, I mix survey and interview data to understand how the participants named the frames for themselves. In other words, when responding to specific questions about the frames in the survey or when referencing the frames when unprompted during the interviews, what did they say? Grounded coding revealed two overarching themes, which inform my framework for representing what participants had to say regarding the frames. As Table 6 suggests, this analysis allowed me to ask: What was the impact of the frames? What did the frames do? Well, according to the data, participants had positive and negative comments to make about the frames.

Table 6: Ways Participants Made Use of and Referenced the Tool (Burke’s Frames)

Frames Prompted Participants to Widen their Perspectives	<ol style="list-style-type: none">1. Build-up conversation (“add”, “provide”, “provoke”)2. Move from less-complex to more complex (“guide”, “turn”, “round”)
Frames Constricted or Restrained Participants’ Thinking	<ol style="list-style-type: none">1. Difficult Concept to Grasp2. Unnatural Focus3. Unclear or Confusing Frames4. Number of Frames

Frames Prompted Participants to Widen their Perspectives

Four of the five participants spoke positively about the frames in terms of providing a springboard and generatively widening their thinking. These impacts include building-up the conversation and moving them from less-complex to more-complex thinking.

Build-Up Conversation

Three of the five participants expressed that the frames helped them to initialize their thinking. For example, in the excerpts that follow, participants use a series of

choice words and phrases (i.e., led me to develop, provoked thought, fired up discussion, evoked, made you feel, provid[ed] the catalyst for, relate this to and make you think) to explain how they understood the usefulness of the frames to jumpstart, flesh out or connect their thinking about the topic in the course of the community dialogue:

Arthur: “[H]aving the opportunity to frame the thought in a rhetorical exchange led me to develop the theme into tangible reality.” (Survey 2)

Matilda: “So I think that using the different words and questions that you did with, uh, with your group talk that you designed, it was, it fired up the discussion. (pause) It, it, like, provoked thought, rather. (Interview 10)

Charlie: So, there were emotions associated with (clears throat) different images and what it evoked and what it made you feel about you know the different types and styles of, of driving or advances ... automated driving. [...]

Facilitator: Um, are ... you're ... are you talking about the frames, then?

Charlie: Yeah, the frames.

Facilitator: 'cause they're providing the catalyst for for ... talking about ... [...]

Charlie: Okay, so it's like those different things seemed to say like how do you relate this to different levels of automated driving and how does that make you think about automated driving? (Interview 2-3)

Arthur, Matilda and Charlie each seem to suggest that the frames were tools that helped them initialize and develop their thinking. It seems also from Charlie’s explanation that the frames allowed him and the other participants (hence his use of “you”) to make connections in terms of relating to the levels of automation and thinking about automated driving.

Move from Less-complex to More Complex

Three of the five participants characterized the frames as useful for the specific purpose of broadening the conversation. For example, in the excerpts that follow, participants

explain that the frames “guided discussion and added perspectives,” “provid[ed] a well-rounded perspective,” and “turn[ed] the conversation”:

Matilda: “The frames guided discussion and added perspectives that we individuals may not have otherwise taken into consideration” (Survey 12).

Molly: “[T]hese frames are useful in providing a well-rounded perspective” (Survey 12).

Charlie: “[Most memorable] was the turn the conversation took while we were discussing the ‘elegy’ slide. It was interesting to see which images spoke to participants and where the trend went with regard to the conversation” (Survey 2).

Matilda, Molly and Charlie seem to suggest that the frames were tools that helped them widen or build-up their perspectives by “adding” and “providing” to the conversation. Additionally, words like “guide”, “turn”, and even “round” imply a kind of movement from a less complex perspective to a more complex one.

Frames Constricted or Restrained Thinking

Each of the participants also expressed reservations regarding the frames. These reservations included concerns that the concept of a frame is difficult to grasp, that they pose an unnatural focus, that some are easier to use/comprehend than others, and that some are missing or irrelevant.

Difficult Concept to Grasp

Molly and Samantha mentioned that the frames were challenging. Molly commented on this topic very straightforwardly in the context of responding discretely to the electronic survey question that asked her to “revisit the community dialogue interface and provide feedback about the strengths and weaknesses you see” regarding Step #2:

“[T]he frames were a difficult thing for us to understand (Survey, Molly 5). Secondly, Samantha echoes the sentiment by explaining that “the frames are weird. That's definitely not a way I've ever thought about anything...Like, I don't, you know ... I don't know what the concept of a frame is ... (Interview 10-11).

Unnatural Focus

Arthur seemed to resist the frames on the basis of emphasis when asked during the electronic survey about their usefulness. He said, “sometimes binaries aren't the most salient feature of a person's discourse, and I can recall being unsure at least once that a person's quote was either of the two (acceptance or rejection)” (Survey 11).

Unclear or Confusing Frames

Charlie and Samantha took issue with some of the frames. Charlie, in response to the survey question about the usefulness of the frames, said, “We had a tough time starting discussions about some of the frames” (Survey 12). Similarly, Samantha explained in her interview that the words used to name the frames were still troubling: “Um, I guess I remember the frames, because I thought they were kind of weird.... Um, I found it difficult, actually, to think about the words that were chosen, like satire and irony, to describe, you know, cars or even driver-less cars.... I thought that was ... I had a hard time with it. I mean, it didn't really make sense” (Interview 1).

Number of Frames

Arthur and Samantha questioned the number of frames in different ways. First, Arthur commented on the electronic survey – after spending time categorizing quotes with frames – by saying, “maybe a category is missing” (11). Also, Samantha commented on the number of frames in both the survey and the interview. In the survey, Samantha said, “I’m not sure that it is extraordinarily useful to go through these particular frames at least all of them” (Survey, Samantha 11). In the context of responding discretely to the electronic survey question that asked her to “revisit the community dialogue interface and provide feedback about the strengths and weaknesses you see” regarding Step #2, Samantha told me in the interview, “The only concern I have about this one, at least initially, was whether some of the frames were relevant to the discussion. Satire, for instance, seemed mildly forced but in the end we did relate things to it later on” (Survey, Samantha 5).

Ways Participants Talked about their Experience in the Public Talk

In this section, I draw once again on the survey and interview data to explore what participants had to say about their experience in the public talk that was not specifically about the frames. Several questions, mainly from the interview data, allowed me to take a wide approach to understanding ways that the unique backgrounds of the individual participants may have contributed to their positions. Grounded coding revealed two overarching themes, which inform my framework for representing what participants had to say regarding the frames. As Table 7 suggests, this analysis allowed me to ask: What was the impact of the public talk? What did it do? How did it fair when compared to

participants' definitions of good conversations? Well, according to the data, the participants had a lot to say about the public talk.

Table 7: Ways Participants Talked about their Experience in the Public Talk

Memorable or Surprising Aspects	<ol style="list-style-type: none"> 1. Peers' Diverse Perspectives 2. Varying Levels of Participation
Understood Goals	<ol style="list-style-type: none"> 1. To Strategize (Marketing and/or Communication) 2. To Circulate Ideas about Driverless Cars 3. Get Strangers to Engage in a Diverse Exchange
Quality of the Discussion	<ol style="list-style-type: none"> 1. Enjoyable 2. Welcoming, Private and Safe Atmosphere
Definition of a Good Conversation	<ol style="list-style-type: none"> 1. An Interplay of Ideas 2. Shared Authority 3. Conversation Partners Have Committed Interests 4. Creates a Feeling of Friendship and Appreciation

Memorable or Surprising Aspects

Data from the interview, specifically the questions asked of participants - *What do you remember most about that experience? Was there anything in retrospect that surprised you?* – shed light on participants' thoughts. This section reports on three themes that emerged from grounded coding. These themes included that participants remembered or were surprised by the diversity of their peers, and the varying levels of their peers' participation.

Peers' Diverse Perspectives

Charlie, Matilda and Molly each expressed surprise with encountering different ideas. First, Molly took a bird's eye view to note largely that "No two people had the same idea. No two people had the same thought process going into it. There were a lot of diverse perspectives" (Interview, Molly 1). Additionally, and more specifically, Charlie and Matilda talked about one participant in particular – Samantha – a person they were uniquely astounded by.

Charlie: I think what surprised me most was the reticence of ... There was one woman there who was probably a generation older than me and kind of the fear that there was for the automated driving. 'Cause it seems to me like that's the logical progression of things, so I just assume it's going to happen and I think it has more of a ... so it surprised me a little bit. But, then I was like, well I guess that's ... I mean maybe that's the cutoff, like I'm an ancient millennial, so (laughs) ... Like maybe that's the generation that with enough of, enough in the more advanced technological age to not be as threatened by that. (Interview 1)

Matilda: Um, probably the most surprising thing was the, um, people who actually had a clear opinion on this. Like, the one girl was very, um, negative towards it, and I found that surprising for this day and age. I don't remember her name, or anything like that, I just remember she didn't like it at all, like the idea of driving, cars driving themselves. So, that was surprising. (Interview 2)

Interestingly, both Charlie and Matilda take issue with Samantha's position as too negative and as distinctly anachronistic. Matilda also is surprised to hear such "clear" positions on the issue.

Varying Levels of Participation

Matilda and Arthur explained that they took on different conversation roles during the community dialogue. For example, Matilda characterized herself as "more of an

observant person, like, I'll sit back and listen... to form opinions after getting a broader view of things” (Interview 7). This characterization alludes to her behavior in the community dialogue; her name comes up the least in the transcript. On the other hand, Arthur seemed certain that he was “making an impact” on the “dialectic” (3). As he put it: “the other people were just sounding boards so ... I would give my ideas to them and, uh, in having an audience I had an excuse to think about these things” (4). He did specifically note that his role in the dialogue was in “introducing novel concepts” (4). Arthur also noted that that Charlie “talked more than [he did] and had a distinct role to play in the community dialogue:

The only other guy... I forget his name. So yeah, he and I, um, we talked a lot. I mean, he talked more than I did. He has a very sort of dominant personality. I think he's a manager or something like this. So he, uh, was good at introducing and... Managing... he was good at directing the discourse. (4)

Even though Matilda and Arthur were the only participants to comment specifically about the varying levels of participation that occurred during the dialogue, it is clear that three of the five participants maintained distinct roles throughout.

Understood Goals

Data from the interview, specifically the question asked of participants *What would you say were the goals of the public talk?* – shed light on participants’ thoughts. This section reports on larger themes that emerged from grounded coding. These themes included that participants thought that the purpose of the talk was to strategize in terms of marketing and/or communication, to circulate ideas about driverless cars, or to engage strangers in a diverse exchange.

To Strategize (Marketing and/or Communication)

Matilda, Arthur and Charlie asserted that marketing or advertising goals were at the foundation of the community dialogue. This theme is immediately telling in the first example below. Note below how I carefully ask Matilda during her interview about the concept of a public talk – strangers meeting to explore a topic of potential interest—and note how her response includes the words “obviously” and “marketing”:

Facilitator: So, the idea that there are these people who don't know each other that are meeting to talk about possibly a topic of interest. What do you think about the concept of that?

Matilda: I think it's a good concept. I think it's a good practice, like, obviously they're going to have these kinds of group discussions for any new marketing aspect for anything... (interview 3)

Quite similarly, Arthur explained that he understood the goals of the community dialogue to be “about communication strategies and things like that” and “to see how people responded to certain, um, to certain ways of framing” in terms of “imagin[ing] there would be some applications to television, advertisement and things like this just to see what's, uh, what frames people respond to.... like, um, focus groups” (Interview 2, 5). This theme is carried still by Charlie who also saw the goals of the community dialogue in terms of promotion, selling:

Charlie: I feel like the goal was just to get some feedback on advantage ... advances in technology in driving, but also in advertising sort of for that or what your perspective would be of certain presentations of the topic. (Interview 1)

Charlie: Um, so I felt like that was almost like, what's the best way for us to present the movement towards automated driving to a variety of perspectives who have an emotional reaction to particular images that were presented ... or something (Interview 2)

It is interesting that three of the five participants characterized the community dialogue in this way. It may well be that participants did not have other categories to draw from and like Arthur, saw their experience a kind of “focus group”, which tends to be associated with advertising and marketing goals. Also, it seems that the participants can imagine dialogue for the purposes of vetting a consumer product, but far less readily as a capacity of citizens.

To Circulate Ideas about Driverless Cars

Arthur and Charlie also both articulated another goal of the community dialogue in the way of circulating information specifically on the topic of driverless cars. In the excerpts that follow, Arthur explains that he received information from the dialogue that he took with him, and Charlie is more specific as he explains that the dialogue was designed to relate him to the levels of automation and make him think about automated driving:

Arthur: I suppose there could be the purpose of, um, sort of if the person who is running the public talk wanted to circulate, you know, their ideas about driverless cars, they could use the public talk as a way of structuring the dissemination of their, um, their ideas. I noticed it was, um, there was a lot of information that was given to the participants in a way that it wasn't just their insights they were giving, they were also getting information as well. So, I guess I did come away with some information that was not mine and that was presented in the public talk. (Interview 6)

Charlie: Okay, so it's like those different things seemed to say like how do you relate this to different levels of automated driving and how does that make you think about automated driving? Like, that seemed to be like the baseline that you wanted to kind of assess in that particular public forum. (Interview 3)

Interesting here is the way Arthur focuses on how he experienced a mixture of the designer's insights as well as information that was new. On the other hand, Charlie is

focused on discrete aspects of the community dialogue, which suggests that he understood those concepts as key to the goals of the experience.

Get Strangers to Engage in a Diverse Exchange

Both Samantha and Molly explained that a major goal of the community dialogue was to get people really talking – for a specific reason: people just don’t it these days. Samantha explains below that “the only way people talk to one another today is in anger” and “we just stare at our phones all the time” so “we need to learn how to talk to one another again” to “reconnect”.

Samantha: Just to get strangers to talk to one another without being disrespectful, because I think the only way people talk to one another today is in anger, like, "Oh, you're getting in my way, and I'm trying to rush to get somewhere," or, you know, people are snickering at those who are constantly staring at their phones. In general, we just stare at our phones all the time, and I think a public talk, if that was more organized ... It's almost like we need to learn how to talk to one another when we don't know each other again. I feel like, you know, it's not really about, oh, getting people together to talk about this one topic, which is, you know, great to facilitate a discussion, but I think it would help society to reconnect again. (Interview 2)

Similarly, Molly explained in her interview that “the goal of the talk was to spark discussion” between “people who don’t know each other” because “it’s beneficial [and]... It’s not normal in our society for sure” (Interview 2). She went on to add that the goal was *not* “to come to an agreement. But just talk about it and gain more information from each other” and get “comfortable talking about our thoughts” (2). Finally, Molly explained that diversity of opinion was a key ingredient for the community dialogue, which she asserted, was concerned with achieving a many-peopled “summarized view” of the topic:

I think if people are trying to get an overarching opinion of something, you can't pick people who are all from the same circle and all from the same background. If you want like a summarized view, you'd need random people from different walks of life, which is what happened (2)

It is interesting that only two of the five participants articulated goals for the community dialogue, which were focused on responding to a perceived lack of literacy on the part of our culture's current obsession with technology and its impact on our ability to get strangers to engage in a diverse exchange.

Quality of the Discussion

Data from multiple questions in the survey and the interview shed light on what the participants thought about the quality of the discussion (community dialogue). This section reports on two themes that emerged from grounded coding, which excluded direct connections to the frames. These themes included that the discussion was relatively enjoyable and welcoming/safe.

Enjoyable

Arthur and Matilda both communicated that the experience in the community dialogue was diverting. Specifically, Arthur said, "it was fun to, again, to talk to people about and to try to influence the conversation. I love conversations about ideas and things like this so it was enjoyable in that way. (Interview 6). Likewise, Matilda, explained that the experience was "[s]imilar to class discussions as if working on a case study (although on a much smaller scale), the various handouts and "steps" made the process slightly more engaging like a game or a presentation. (Survey 12).

Welcoming, Private and Safe Atmosphere

Three participants, Matilda, Samantha and Molly, explained during their individual interviews – especially questions about to what extent they felt that the public talk was in fact *public* – that they had felt comfortable, secure and unexposed when speaking with others during the community dialogue:

Matilda: Honestly, I, I, I found it to be a much more welcoming atmosphere, much more private simply for the fact that I didn't think I was going to see these people ever again, and so I had no fear of OK I'm going to see them, like, in a Monday/Wednesday/Friday class. OK I'm gonna see this person two days from now, and they're going to know what I said and they're gonna judge me. It seems like there's a lot more exposure in a classroom, or in a place where you see people again, and again, and again. (Interview 4-5)

Samantha: You know, I think public usually implies something that's out in the open, but this, you know, it didn't feel like we were being broadcast to the whole world. It still felt very secure and kind of private. I guess the public part just comes with, you know, you're talking to people you don't really know. (Interview 3)

Molly: “I would say it’s public because I didn’t feel like it was private information that wasn’t going to be shared or be restricted. I felt like I was comfortable with my thoughts being shared to whoever needed to see it. I don’t feel like it was public in the fact that we didn’t have any scrutiny in our discussion. I guess, like in the sense that you have an idea and you have a panel of people kind of throwing questions at you like – prove why you feel this way. Things like that. It would feel a little bit more – I would be more hesitant” (Interview 3)

It is interesting to note how *publicness* gets juxtaposed as each of the three participants characterize the community dialogue as less public and more private. Matilda and Samantha seem to equate publicness with exposure and fear of stranger relationality (i.e., “I didn't think I was going to see these people ever again, and so I had no fear” and “I guess the public part just comes with, you know, you're talking to people you don't really know”). Finally, Molly seems to associate publicness with scrutiny (i.e., “I don’t feel like it was public in the fact that we didn’t have any scrutiny in our discussion”), a point that

suggests that the consequence of not having a facilitator (in the sense of a teacher) meant that no one was appraising the relative merits of people's contributions and therefore she characterized the talk as "private".

Definition of a Good Conversation

Data from interview questions which asked participants to describe/define good conversations and name outcomes yielded several themes when subjected to grounded coding. These themes included that good conversations entail an interplay of ideas, shared authority, committed interests, and feelings of friendship and appreciation.

An Interplay of Ideas

Four of the five participants, all except Matilda, explained that good conversations have an open quality to them in which ideas are "bounced", "explored" and tested. This *openness* was expressed in a few different ways, as can be seen below:

Charlie: And I think on the discussion end of it um, it's beneficial in the fact that you can bounce ideas and delve into ideas and kind of explore different concepts and interpretations and kinds of things. Obviously it can be developed into like ideas. (Interview 11)

Samantha: Well, um, they open up my mind to new ideas. They give me ideas. Uh, and then I always do have a feeling like, "Oh, this was a good conversation. This was a good use of my time." (Interview 8)

Molly: I would say any conversation that's open is a good conversation. I think a conversation feels awkward when here's boundaries and lines you can't cross – like maybe with an authority figure or someone you report to. But with friends, there can be lines that get crossed, especially depending on closeness a friendship. But with whoever it is – strangers or not – if you could have an open conversation – that would be a good conversation to me.

Arthur: Because, uh, in this environment and with this particular individual, it was, um, it was no interplay of ideas. So, I would give my ideas, she would give her idea. Her idea was, um, very, uh, antagonistic. It was, it was hostile to dialectic ... So just closes it off. (Interview 8)

In Arthur's example, he uses negative evidence from a Facebook exchange that allowed him to articulate what was missing from his interaction with an unwilling conversation partner. It is particularly telling in this case to note his sense that the failure happened because the female in question was "close[d] off" instead of *open* (as Molly, Samantha and Charlie) clearly explain is vital to a good conversation.

Shared Authority

Arthur, Samantha and Matilda each articulated similar versions of another important characteristic of good conversations, that partners strike a degree of *partnership* by taking turns, listening to one another and sharing the floor, not monopolizing it:

Arthur: A good conversation for me is one in which I have some say in what we've talked about. In which, what I say we talk about is only limited what I deem is appropriate so I don't, or I don't feel that the other person, uh, is dictating the other conversation. Um, I guess a good conversation its where neither is dictating. (Interview 11)

Samantha: Um, 50-50, first of all. Like, each person gets to talk half the time, so you talk half the time and you listen half the time. (Interview 7)

Matilda: Yeah, yeah, and um, so, unformed, clearly spoken, everyone's listening to each other, or at least giving each other the floor so to speak, like OK, you have your turn to speak, I'll keep quiet even though another person might not agree, they'll at least keep their mouth shut while the other person expresses themselves, and usually there's some form of closure for somebody. (Interview 8)

Note that both Samantha and Matilda have strong opinions on this matter as they advocate for conversation partners to maintain manners/politeness: "you talk half the time and you

listen half the time” and “they'll at least keep their mouth shut while the other person expresses themselves”.

Conversation Partners Have Committed Interests

During their interviews, Charlie and Molly explained that good conversations are meaningful. For Charlie meaning is manifest in terms of vested, exchangeable knowledge and shared interest: “I feel like any time I can find someone who is more knowledgeable about a topic than I or at least as interested in a topic as I am, that provokes good conversation (Interview, Charlie 9-10). For Molly, meaning is clothed in a rhetoric of care:

And I think a good conversation would have some sort of meaning to the people that are involved. Like I don't feel like I would have a good conversation with somebody if I didn't care what we were talking about. So, if it was meaningful to one or both people I think it would be a good conversation. (Interview 5)

These data show that Charlie and Molly expect their conversation partners to share and participate genuinely in an exchange of rational or affective meaning. There is also the larger sense that neither person wants to feel like their time is being wasted by another.

Creates a Feeling of Friendship and Appreciation

All five of the participants explained that good conversations create feelings (i.e., “friendship”, “sympathy”) or strike a tone (i.e., “calm”, “good”, not “disrespected”):

Charlie: No, um I think they ... if it's a conversation as we just discussed, I think it um creates a feeling of friendship or appreciation one with the other. You know, that there's you know kind of a relationship building there. Either something a casual as coworkers or something as intimate as a relationship. (Interview 10)

Samantha: I wonder if ... I mean, they would've heard my opinion, so hopefully that opened their mind up to how someone else sees things, and also perhaps they felt like they helped me open up my mind, so maybe they get a good feeling from that, hopefully. (Interview 8)

Arthur: Face to face you got those mirror neurons going so there's this immediate sympathy between people.

Facilitator: (affirmative) There's a willingness to ... To what? To talk to it out? To find common ground?

Arthur: That's right. (Interview 9)

Matilda: Um, calm. I would say calm, um, informed, not a lot of repetitive sentences. Like, you know, you meet some people and they're just like, "No, you're wrong! No, you're wrong!" and they just shake their head and rolls their eyes. People literally do that. It surprises me, but (laughing). (Interview 8)

Molly: A couple things. A good conversation would allow people to verbalize what's on their mind. Um, I think in a good conversation people wouldn't feel negatively toward each other. They might feel negative about the situation or the topic, but they wouldn't feel disrespected by each other or awkward around each other. (Interview 5)

Although Matilda and Molly's answers do fall into this category –good conversations create a feeling of friendship and appreciation – their answers draw literally from negative evidence. They use this evidence to show that conversation partners can have more complex relationships marked by distinctively generative features, such as relationship-building and genuine appreciation.

Why Does this Matter?

In this chapter, I analyzed the survey and interview data to understand how the participants named the frames for themselves, and what they had to say about their experience in the public talk that was not specifically about the frames. What this analysis drives home is how much the frames seemed be a generative force, which allowed participants to widen or build-up their perspectives and *pressed* them to think on

their feet in order to use the frames (a tool that many were unsure of or uncomfortable with) to co-construct discourse. The challenge that the technai posed speaks to the participants' sense that the experience of participating in the dialogue was complicated and individualized; some recognized the inherent value of engaging in such a diverse exchange and others imagined only that their dialogue would be useful for the purpose of vetting a consumer product. These findings, combined with data revealing participants' definitions of a good conversation, give credence to the argument that literate practices such as framing may help participants to co-construct deliberative discourse that builds the capacity of citizens to engender those hallmarks of a good conversation (an interplay of ideas, shared authority, committed interests, and feelings of friendship and appreciation) about such controversial and speculative topics as the future of driving.

In the next chapter, I return to the community dialogue transcript and use the electronic survey and follow-up in-person interview data I collected to focus on moments of productive conflict, which press participants to negotiate competing voices in order to construct meaning and ultimately build knowledge. This data will answer the third question of this dissertation study:

- 1) When successful, what does the deliberative discourse that participants construct together using this tool look like and do?
- 2) What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk?
- 3) What kind or kinds of knowledge does this discourse construct?**
- 4) From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces?

CHAPTER 6

ANALYZING THE DISCURSIVE CONSTRUCTION OF KNOWLEDGE

This chapter has two main sections. First, I focus on moments of productive conflict, which press participants to negotiate competing voices in order to construct meaning and ultimately build knowledge. Then, I revisit the data I collected (transcript, electronic survey and follow-up in-person interviews) to identify kinds of knowledge constructed by the discourse.

Contextualizing this Chapter's Purpose: Participants Co-Constructing Knowledge

This chapter presents data from the transcript, follow-up surveys and in-person interviews for the purpose of answering one of this project's larger research questions:

- 1) When successful, what does the deliberative discourse that participants construct together using this tool look like and do?
- 2) What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk?
- 3) What kind or kinds of knowledge does this discourse construct?**
- 4) From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces?

In order answer this question, this chapter's findings describe the participants' assessments of the community dialogue according to major emergent themes in the data.

Negotiating Conflict: Discursive Knowledge Construction

How do we know if new knowledge has been constructed? To begin, Linda Flower tells us that “studies of knowledge building document the advantages of embracing difference and taking the provisional stance of inquiry in widely different settings.” However, doing so poses substantive challenges. Flower elaborates:

[T]his is no easy stance to take; people must *overcome* considerable barriers, starting with established social practices that rush to hush awkward dissonance. They must *resist* deep-running cognitive processes and learned interpretive schemas that assimilate and nullify difference. And they must *invoke* literate practices of inquiry—from a Socratic dialogue to the scientific method—that invite and shelter the particular kinds of divergent thinking they value. In short, the real challenge of knowledge building is to *embrace*, not just tolerate, conflict. (emphasis mine, Flower “Intercultural” 239-240)

Note the italicized action verbs in the excerpt above (overcome, resist, invoke, embrace). These action-oriented words can begin to paint a picture of the effort involved in constructing new knowledge. This work is further described in the context of Young, Becker and Pike’s work, cited still by Flower: “[O]ne of the enduring difficulties of building new knowledge is the need to *seek difference*, to *tolerate dissonance*, and to *embrace the generative possibilities* of conflicting ideas and competing realities within the process of inquiry” (emphasis mine, Flower “Intercultural” 239). These verbs again show knowledge construction as engaged work: people have to take specific actions on purpose in order to create the conditions for new knowledge to be constructed. Moreover, these verbs also point to struggle, conflict, and negotiation as necessary components of the process.

In order to determine the kind or kinds of knowledge constructed by the community dialogue discourse, I set out to identify moments when participants were up

to some problem-solving work. That is, when in the data are they struggling? What does conflict look like? What competing voices are they negotiating? Or, in terms of the verbs of focus above, when do participants *overcome, resist, invoke, seek, tolerate, embrace* “conflicting ideas and competing realities” during the community dialogue on the future of driving or after (during the electronic survey or follow-up in-person interviews)? It is important to consider moments during and after the dialogue because evidence of participants’ knowledge construction may be available in the participants’ reflections (electronic surveys and follow-up in person interviews). As I mentioned in Chapter 3, “conflict” is a defining feature of co-constructed emergent processes like the community dialogue I designed, which asked participants to navigate a task that they may not have had much or any prior experience with. According to Flower’s theory of negotiated meaning-making, “*conflicts* shape meaning-making as writers or collaborative partners manage the tensions and conflicts among the multiple forces voices or forms of knowledge” that “shape meaning: the social and cultural context, the demands of discourse, and the writer’s own goals and knowledge” (Flower, “Intercultural” 243; *Construction* 63).

I coded both the community dialogue and the assessment data for moments of conflict or “hubs of negotiation” to “track[s] the construction of negotiated meanings within [the] system [of the community dialogue]” (Flower, “Intercultural” 243). To account for the different meanings or personal representations individuals construct and “also walk away with” from the same contexts, I use negotiation theory in two ways. First, I craft composite portraits (from the survey and interview data) for each participant to characterize his or her stance in the dialogue. I then use these portraits as a theory-

building guide to interrogate a conversation thread from the community dialogue to account for competing voices that appear in the conversation thread for each participant, behind-the-scenes. Second, I extend the findings from the first use of negotiation theory and revisit the findings from chapters 4 and 5 for the express purpose of drawing connections between moments of conflict/negotiation and knowledge construction. By combining these two approaches I discuss negotiated meaning-making as a precursor to knowledge building and ultimately determine what kind or kinds of knowledge is constructed by the discourse.

Below I contextualize the conversation thread before characterizing each participant's stance in the dialogue. Then I observe, while being careful to not overstate, what voices are being privileged in their "live" responses as they individually and collaboratively negotiate meaning to solve a problem in the context of the community dialogue.

Negotiating Conflict in the Community Dialogue: Contextualizing the Conversation Thread

After participants break the ice in Step 1, they begin the very different work of becoming familiar with and making use of the frames according to the instructions provided in Step 2. As readers would expect, the participants can be observed negotiating the demands of Step 2, "mak[ing] difficult decisions in in the face of multiple, internalized competing public voices" (Long, "Rhetorical Techne" 31). In the conversation thread that follows, the participants have just finished grappling with the basic Step 2 instructions (participants begin Step 2 on page 11; this conversation thread begins at the bottom of

page 15). We find them just as Charlie realizes that they have missed an important component of the instructions; that they should be discussing the questions, not just writing down their answers in silence.

Note that I introduce participants in the order in which they talk in the passage.

Charlie

As a 34-year-old professional Business Management Consultant and a creative writing major, Charlie is a confident conversationalist (i.e., “I feel like no matter what I can at least intelligently gather information and contribute to the conversation from the perspective of gathering that information and asking questions that might give me uh information that I need” (Interview 11). He also seems to be a flexible and willing conversation partner: “due to my upbringing, I have a very like conservative base of friends and I have a very liberal base of friends due to my life now, and so I try and ... what I try and do is create a diplomatic way of presenting my perspective” (Interview 7-8).

Molly

A 21-year-old Communication major (Bachelor of Science) and a Women and Gender Studies minor, Molly is a professional Medicare patient advocate for a local hospital: “So if patients have questions about their Medicare or their doctor is involved in the Medicare network, they call me and talk to me about it. And, a lot of their concerns are... ‘I don’t want my information shared’” (Interview 3-4). She also seems to have open channels of communication with several people including her roommate: “We talk every

day. And my family – we’re close. We talk daily. My sisters and I do a group text thing” (Interview 4).

Matilda

A 22-year-old Business (Global Politics) Major, Matilda considers herself to be “more of an observant person, like, I’ll sit back and listen” (Interview 7). She also seems to be concerned with issues of access. Over the course of her interview, Matilda mention that she is “a starving student” who doesn’t have “money to just go down and have a life experience” (5), and she explained that “someone who lived in more suburbs...would have more to say about [driving] versus someone who lives in like, completely rural where it's ...not that dangerous to drive your own car because there's no one around to hit so” (2).

Arthur

As a 22-year-old English Literature major and a psychology minor, Arthur strongly values his own opinions over others (i.e., “the other people were just sounding boards so ... I would give my ideas to them and, uh, in having an audience I had an excuse to think about these things” (3), “I tend to read things that tend to amplify and augment my existing beliefs. Yeah. I don't, uh, challenge them heavily ...” (10)). He also seemed very “excited” to participate in a research study and was “conscious about [his] rhetorical strategies” (3). He said in particular, “I was trying to ... It was almost like I was performing” (3).

Samantha

A 28-year-old chemistry Ph.D. student, Samantha was the least confident or enthusiastic conversationalist. She said herself, “I’m not really into the idea of a conversation.... I feel like I just want to express my opinion and leave it at that”

(Interview 4).

I think I reached the point where I feel like my opinion doesn't count.... And so, I'm not even interested in researching more information about something, because what's the point? No one's going to want to hear my opinion anyway.... And everyone else has, like, similar opinions, so I always feel like I'm the odd one out, and I'm tired of feeling that way, so I kind of just ignore stuff now. (Interview 5)

Samantha’s negativity toward communicative engagement with others also seemed to translate to the workplace: “even in the workplace there are so many people around me, but I just don't talk to the majority of them ever even though I see them every day”

(Interview 2-3).

These portraits seek to highlight the unique perspectives that each participant brings to the community dialogue, which contribute the diversity of the conversation and begin to reveal the kinds of voices each participant may be negotiating throughout the dialogue.

Below I juxtapose the “Speakers” and “Dialogue” with my “Analysis” that names key components of participants’ composite portraits that show up as they negotiated their way through a problem (responding collectively to Charlie’s realization that have been “ignoring the questions”). I do this to indicate how their discursive moves have structural and thematic consequences in the ensuing dialogue—consequences visible in the

transcript. Readers will note that responding to Charlie’s realization required participants to talk together about Burke’s elegiac frame in the context of driverless cars.

Note that I bold text in the left hand column below (“Speakers” and “Dialogue”) to highlight specific moments which correspond with the “Analysis” column. (See Table 8).

Table 8: Conversation Thread – Participants Negotiating Conflict in Step 2

Speakers	Dialogue	Analysis
Charlie:	You know what, we're somewhat ignoring the questions here , as well. I think they're probably meant to evoke discussion. [00:27:00]	Charlie takes and maintains the leading/managing role in order to construct what the interface seems to ask of them. His employment background (business consultant) primes him well for this role.
Molly:	Uh-huh.	
Charlie:	And I had really ...	Charlie empathically and diplomatically reorients the group to “focu[s] more on the... screen”. His background as a conservative and present as a liberal may influence this relationship-maintenance move.
Matilda:	This ...	
Charlie:	I ... I breezed over them, but as well we can, focusing more on the, uh, the screen.	
Molly:	Yeah.	
Charlie:	Or the slide itself, the frame.	Arthur makes a contribution here, taking the role of expert and introducing content in terms of using his peers as a “sounding board” (Interview 4)
Arthur:	Elegy, isn't it a poem or a song that's sung or written, uh, in honor of somebody who's dead, or something that's passed on?	
Molly:	Like in mourning , yeah.	
Arthur:	Yeah.	Molly’s recast of Arthur’s definition gives the exchange momentum. Her employment background as a patient advocate may influence her willingness to take on the role of active listener.
Charlie:	Yeah, it’s meant to kind of immortalize or pay tribute to ...	
Molly:	Uh-hmm.	
Charlie:	Can cars be elegies? I don't know. The Mustang?	
All:	(Laughing)	
Arthur:	Okay. Wow.	
Charlie:	Or would James Dean been ... had been ... would he	

All:	have been James Dean without the car?	
Arthur:	(Laughing).	
Arthur:	Or with the ... with the onset of the driverless car, many things will pass away.	Charlie and Arthur take turns nominating examples to ascribe initial meaning to the frame—to take up the new shared task.
Molly:	Mm-hmm.	
Arthur:	Like who is to say the ... the traffic cop.	
Molly:	Mm-hmm.	
Arthur:	Perhaps. No more. So it's an elegy ...	
Charlie:	Drivers and public transportation, like you were mentioning.	
Molly:	Mm-hmm. Mm-hmm.	
Arthur:	And even then, the ... the power of machismo, that associates with the operator of a particular vehicle.	
Molly:	Sure. Or the enforcer of the law.	Molly mentions her concern with policy/law—apparently to nominate an elegaic aspect for the group to consider.
Charlie:	True.	
Samantha:	Um, that makes me sad, though.	Samantha takes the role of the emotional anchor to steer the conversation—possibly into more familiar terrain.
Molly, Matilda:	Yeah, yeah.	
Charlie:	It makes me sad about suburban spread.	
All (not Arthur):	(Laughing).	
Charlie:	Just because I've watched it around. I grew up in like an isolated country plot and ...	Charlie moves to relate (given his background as a conservative and present as a liberal)—apparently to maintain cohesion in the group.
Molly:	Oh, really.	
Charlie:	that the biggest city, Spokane, Washington, used to be ... it was like a 45-minute drive. It was a 30-minute drive. Now when I go home, it takes about 15 minutes to get to the city.	
Molly:	Yeah, yeah.	
Charlie:	So it's ... it's fascinating to watch that.	Matilda connects to rural drivers—who don't understand the situation like suburban drivers.
Matilda:	I come from Moscow.	
Charlie:	Oh, really?	

Matilda:	Yeah.	
Charlie:	(Laughing).	
Molly:	That's so funny. (Pause)	
Molly:	Just along the lines of the Mothers Against Drunk Driving ...	
Samantha:	Mm-hmm.	
Molly:	in thinking two things. One, what would it take for them to have to program an option for a manual override? And second, what would their safety features be against a manual override? Because obviously if a technology fails, I need to override, would you have the option or would you have like an OnStar or something that's where you just stop and call that and they would come fix? No. And then what would be the safeties for those, uh, technology workers, right, to ... to be, um, moral in a sense and follow the law?	Molly draws on her concern with policies and procedures to ask a series of questions. These questions further reveal the potential contours of the frame.
Matilda:	Like would it like pop out a breathalyzer to check ...	Matilda is concerned with how things play out – as a starving student.
Molly:	Sure.	
Matilda:	If you're even able to drive or check like for voice?	Charlie maintains a manager role in order to acknowledge that their conversation generated an interesting outcome.
Molly:	Sure.	
Matilda:	Like if it was an accident software, like things like that.	
Molly:	Uh-hmm.	
Charlie:	It's interesting that the elegy slide provoked that train of thought, just to not to be meta (Laughing).	

As my analysis of this conversation thread suggests, the participants were actively engaging in knowledge-building to support quality deliberation in the dialogue, using

their situated knowledge to co-construct negotiated meaning about the elegy frame specifically. They contributed all sorts of discursive resources—ranging from their employment backgrounds to their social-behavioral habits to their emotional commitments—in order to do so.

Further, the above conversation thread demonstrates that this successful deliberative discourse is both a “social and a cognitive process (a collaborative and an individual/internal act)” (Nystrand et al., 1993 qtd in Flower, “Intercultural” 265). Similarly, Flower’s intercultural dialogues or think tanks ask participants to use their differences. Ordinary people can use their differences as currency to “construct negotiated meaning – an expanded understanding of a problem that “acknowledge[s] and accommodate[s] rival representations and ways of knowing” (Flower, Intercultural 265). The participants who took part in my community dialogue were asked to use their differences to collaboratively construct six distinctly different representations of the future of driving. Like Flower’s interventions (intercultural dialogues or think tanks), my community dialogue seems to have yielded transformed understanding in terms of “enlarged thought” (I. Young 52) and “realistically complex understandings of issues of shared concern” (Higgins, Long, and Flower 27).

In the next section, I extend the findings from this section and revisit the findings from chapters 4 and 5 for the express purpose of drawing connections between moments of conflict/negotiation and knowledge construction and to identify additional kinds of knowledge constructed by the discourse.

Tracking Moments of Conflict/Negotiation: Identifying Kinds of Knowledge Constructed by the Discourse

Structured community dialogues, think tanks and such are designed to draw out participants' prior and situated knowledge – representations that participants arrive with – to build on. In the course of engagement, should participants encounter and sustain conflict, new representations may emerge result in influenced (at least) and transformed (at most) knowledge. In the last section, I tracked the participants' efforts to overcome the problem that Charlie named (they had been ignoring the questions on the interface) as an incipient moment of intercultural knowledge building where “highly diverse representations and acts of individual rhetors, on one side, lead to new socially constructed knowledge and action on the other” (Flower, “Intercultural” 242). In the conversation thread, the participants can be seen pooling their situated knowledge to complicate their representation of the elegy frame (definition, examples, and kinds of cars/driving). It's valuable work because shows the participants *using* their situated knowledge to construct new knowledge. As Flower explains, “In an intercultural dialogue, the knowledge that matters most is what the actors within the activity construct – since it is their understanding that is realized in actions and outcomes” (265).

There is one big difference between Flower's community think tanks (“Intercultural”) and the community dialogue I designed on the future of driving. This difference is the relative immediacy of the exigency prompting the dialogue. For my participants, the realities of driverless cars are speculative. While new articles circulate about issues related to the ever-impending release of technologically advanced transportation (including that driverless cars have gotten into accidents and driverless

cars have been hacked), the topic lacks the immediacy that urban curfews or workplace issues have for stakeholders immersed and enmeshed in very real problems, which tend to drown out or render silent diverse representations. (Hence the benefit of an intercultural dialogue that offers/teaches literate strategies or “capacity-building tools for local decision making” (Flower, “Intercultural” 246).

Given the future-oriented nature of my participant’s talk, it is important to consider the nature of speculative knowledge and where speculative knowledge was constructed by the discourse. In the sections that follow, I define speculative knowledge before interpreting moments of conflict/negotiation in the transcript and assessment data.

Defining Speculative Knowledge

In this section, I argue that speculative knowledge constitutes a unique combination of knowledges—especially theoretical, practical and productive, which combine to allow a person (or people) to have an advanced awareness and understanding of the future. So far, my dissertation study has relied on two distinct kinds of knowledge: situated knowledge (affective and embodied (often tacit) logics behind speakers’ words) and intercultural knowledge (diverse, social and intellectual understanding collaboratively constructed). However, there are also three classical definitions of knowledge provided by Aristotle: theoretical, practical and productive. As Janet Atwill explains of Aristotle’s *Metaphysics* (Book 1) and the *Nicomachean Ethics* (Book VI):

Theoretical knowledge eventuates in epistêmê, conclusions deduced from first principles; natural science, mathematics and philosophy are models. *Practical knowledge* requires phronêsis, the ability to choose and act well in the world of experience, with ethics and politics as models. *Productive knowledge* requires knowledge of a particular tekhnê or art, understood as

a reasoned capacity for making something, with ship building and medicine, which ‘produces’ health, as examples (*emphasis mine*, Waltzer 102)

With these two non-traditional and three classical types of knowledge in mind, I wonder what is speculative knowledge? How might it be informed by productive, practical or theoretical kinds of knowledge? What does it mean to have fluency with respect to topics that are not immediate, not tangible or maybe not even useful? Contemporary scholarship focused on speculative work can begin to answer these questions. For example, in a recent article, Tanyoung Kim and Carl DiSalvo discuss *speculative visualization* projects that use visual rhetoric to “represent[t] socially and politically meaningful data in aesthetic ways to provoke viewers’ interpretation[s] and further elicit discussions” (Kim and DiSalvo 1). Also, Di Salvo has written extensively about *speculative design* as a “particularly inventive mode of design that is concerned with developing imaginative futures or alternate presents” and building technological fluency (“Spectacles” 109). Whether visual or tangible, DiSalvo tells us that speculation “works by isolating facets of culture and recasting those facets in ways that alter their meaning in order to produce new images” (111). Like the community dialogue on the future or driving, participants are pressed and sometimes helped to formulate particular instantiations of classical knowledge in three ways: 1) drawing on their own understanding to comment on the unknown, 2) identifying interrelated issues that may arise as a result of the future states, and 3) articulating new future-oriented, imaginative possibilities and limits. By combining these three categories of speculation and following the verbs (to look for sites of negotiated meaning making), we can note that speculative knowledge can be built by “*provok[ing]* viewers’ interpretation[s] and further *elic[it]ing* discussions” and

“*recasting*... facets in ways that *alter* their meaning” (Kim and DiSalvo 1; DiSalvo “Spectacles” 111).

The community dialogue was designed to allow participants to engage with a speculative topic, and my analysis in Chapter 3 of the transcript from the community dialogue showed what it meant that participants were exploring a speculative topic: they drew on their own understanding to comment on the unknown, they identified interrelated issues that may arise as a result of the future states, and they articulated new future-oriented, imaginative possibilities and limits. But, did this exploration enable participants to build speculative knowledge? Much as the transcript from the community dialogue provided traces of deliberative discourse, so too, the data I’ve collected instantiates the nature of speculative knowledge. That is, the conflicts participants encountered (regarding the interface itself, the frames and the topic at large) are a window into negotiated meaning making and in the realm of the speculative knowledge.

Locating Speculative Knowledge

In this section I invoke verbs that Young, Becker and Pike and Flower use to identify specific actions that people take to create the conditions for new knowledge to be constructed (overcome, resist, invoke, seek, tolerate, embrace). I use those verbs to identify moments of conflict in the transcript and assessment; I then map the negotiations that ensued according to the types of knowledge categorized above. (See Table 9). This work will allow me to discuss speculation as a type of knowledge based on what it looks like and where gets built for individuals and for the group as a whole.

Table 9: Locating Knowledge Constructed by the Discourse

Kind of Knowledge Constructed	Knowledge Constructing Verbs	Moment of Negotiation or Conflict in the Data
Theoretical	Invoke	Participants engage with the frames in Step 2 and 3
Practical knowledge	Overcome, Tolerate	Participants encounter real difference
Productive, Intercultural	Seek, Resist, Embrace	Participants use the frames to co-construct a more complex, diverse perspective.

Theoretical Knowledge

Because participants were tasked to use Kenneth Burke’s frames of acceptance and rejection – a theoretical construct that commends analytical categorization, they were engaged with hypothetical or contemplative ideas. As Atwill explains, “[t]he most significant distinguishing characteristic of theoretical knowledge is that it is pursued for no practical end” (170). Participants were asked to speculate on the definitions of the frames – a task that Charlie tells us in the survey was difficult: “We had a tough time starting discussions about some of the frames”. Participants also were asked to invoke the frames in order to speculate further – a task that Charlie again tells us he struggled with: “I had a hard time with the frames; it was hard to understand how the words/situations shown could be applied to thinking about the driverless cars.” It is clear from the transcript that the participants were able to co-construct usable definitions of the frames from Step 2 and invoke several of them in Step 3 in response to the scenarios presented. The levels of automation could be considered to be another kind of theoretical knowledge that participants encountered and built during the community dialogue. That is, like the

frames of acceptance and rejection, the levels of automation are an attempt by the NHTSA to draw lines in the sand – to analytically categorize the effect of technology on future transportation. Step 3 of the community dialogue was designed help participants build knowledge about the levels of automation; they were tasked to invoke the frames *and* specific levels in response to scenarios. The data below, taken from the survey, show that Arthur, Samantha and Molly had different experiences building theoretical knowledge on this topic in the course of the community dialogue:

Arthur: We were able to discuss the levels of automation only briefly, and with little depth of understanding. The information seemed disconnected from the tasks we were assigned, and was also too much information for the average pace of a conversation. (Survey 3)

Samantha: I think we were able to discuss [the levels of automation] quite thoroughly based not just on what was presented on the interface but cultural ideas of what automation would look like and how it would appear to operate from films, etc.

Molly: We had quite a bit of trouble understanding the levels of automation, therefore our conversation was inhibited.

It is clear from these three responses that only some participants were able to productively speculate about the levels of automation. This suggests that theoretical knowledge was individually constructed.

Practical Knowledge

Participants were tasked to have a good conversation – an activity that arguably requires practical knowledge. That is, per their own collective definitions, having a good conversation entails that partners encounter an interplay of ideas, share authority, have

committed interests, create a feeling of friendship and appreciation. These characteristics correspond to wise action. As Atwill tells us, practical knowledge, or wisdom, is “a reasoned and true state of capacity to act with regard to human goods” (EN II40b20 qtd. in Atwill 171). Or as Waltzer explains, “[p]ractical knowledge requires phronêsis, the ability to choose and act well in the world of experience, with ethics and politics as models” (102). In the course of their structured conversation, participants encountered new ideas, as Molly explained during her interview: “No two people had the same idea. No two people had the same thought process going into it. There were a lot of diverse perspectives” (1). It is clear that participants were able to overcome what might otherwise be barriers or awkward dissonances regarding their outside definitions of a good conversation. Arguably, these moments throughout the dialogue in which participants are encountering the diverse perspectives of their peers are moments when they are building practical knowledge. For example, Samantha explains in her interview that she thinks the frames would be useful in a workplace situation such that she would have a reason to talk to her co-workers:

Yeah, I mean, it's kind of an awkward thing to do. Maybe that would be more useful in the workplace. Because even in the workplace there are so many people around me, but *I just don't talk to the majority of them ever even though I see them every day*, so maybe that would be a place to start something like that (emphasis mine, 3)

Certainly Samantha sees the practical value of connecting with her work peers – building relationships with people that she shares space with but does not actively interact with. The capacity of this discourse to build practical knowledge is notable in moments like Samantha’s insistence that the frames could act as an intermediary that would encourage people to “choose and act well” to care about other humans such their opinions might

matter (as she currently feels like hers does not: “I think I reached the point where I feel like my opinion doesn't count (Interview 5). Like Samantha, Charlie, Molly and Matilda suggested in their survey responses that practical knowledge was generated by the discourse in the sense that they were better able to hear different opinions.

Charlie: I think it was interesting to see what the different perspectives were on it and what came about as concerns, but it did not necessarily change my ultimate perspective of or approval for the concept.

Molly: I loved this experience because of the range of opinions and cultural preferences across the group of participants. It made for wonderful discussion!

Matilda: Listening to different opinions on the topic. Some individuals focused their analysis on the positive and societal impact the cars would have while others focused on the negative and/or gradual transitions the cars would face in the future.

Samantha: I wouldn't have thought about most of the things we discussed as a group on my own. A lot of ideas came up that surprised me and were new to me and very different to my own personal ideas.

Practical knowledge relies on action. Will participants be better positioned to actively pursue or recognize when diverse perspectives are not present – or should be present? We know from our exploration of the transcript that these survey responses were *won* on the back of the participants overcoming and tolerating many moments of negotiation in the course of the community dialogue.

Productive Knowledge

Participants used Kenneth Burke's frames of acceptance and rejection as a rhetorical problem-solving tool (technai) to co-construct new perspectives with the regard to the topic. In the course of this work, they were engaged in building intercultural knowledge – a class of productive knowledge. As Flower explains, intercultural

knowledge is constructed when “highly diverse representations and acts of individual rhetors, on one side, lead to new socially constructed knowledge and action on the other” (Flower “Intercultural” 242). That is, when participants gain “clearly purposeful knowledge” as Atwill puts it, they have gained the ability to take informed action (170). Waltzer explains productive knowledge further as “requir[ing] knowledge of a particular tekhnê or art, understood as a reasoned capacity for making something, with ship building and medicine, which ‘produces’ health, as example” (102). In my community dialogue, participants relied on Burke’s frames to negotiate two larger tasks (becoming familiar with the frames and using them to interpret the scenarios and levels of automation), and in the last section I explored the possibility that they built intercultural knowledge.

The quotes below show that participants recognized (and maybe embraced) the generative realities generated by the frames and saw the frames as a tool that allowed them to *do* something different in the course of their conversation:

Arthur: “[H]aving the opportunity to frame the thought in a rhetorical exchange led me to develop the theme into tangible reality.” (Survey 2)

Matilda: “So I think that using the different words and questions that you did with, uh, with your group talk that you designed, it was, it fired up the discussion. (pause) It, it, like, provoked thought, rather. (Interview 10).

Matilda: “The frames guided discussion and added perspectives that we individuals may not have otherwise taken into consideration” (Survey 12).

Molly: “[T]hese frames are useful in providing a well-rounded perspective” (Survey 12).

Charlie: “[Most memorable] was the turn the conversation took while we were discussing the ‘elegy’ slide. It was interesting to see which images spoke to participants and where the trend went with regard to the conversation” (Survey 2).

It is too soon to claim that the discourse generated by this study allowed participants to resist “*deep*-running cognitive processes and learned interpretive schemas that assimilate and nullify difference”, but the evidence above suggests that participants saw the value of the literate practice of framing such that they were able to speculate productively about the future of driving.

What’s This all Mean?

I returned to the community dialogue transcript to focus on productive conflict. In one conversation thread, I tracked the participants as they negotiated competing voices in order to construct meaning and ultimately build knowledge. What this analysis drives home is that participants arrive with rich, complex and multi-varied repertoires and cultural knowledge, and only by “tracking the construction of negotiated meanings within a system” can we begin to account for the different meanings or personal representations individuals construct and “also walk away with” from the same contexts (Flower, “Intercultural” 243). This level of detail suggests that the frames – although participants expressed mixed feelings about them – positively impacted the deliberative discourse in of the community dialogue in terms of both engendering productive conflict and productive speculation on the topic of the future of driving.

In the next and final chapter, I address the last of my larger research questions to explore the implications that follow for the design and study of intentionally-mediated discursive spaces, and to make suggestions for future iterations.

- 1) When successful, what does the deliberative discourse that participants construct together using this tool look like and do?

- 2) What do data from participants' use of the tool suggest about the efficacy of Burke's frames to structure new kinds of public talk?
- 3) What kind or kinds of knowledge does this discourse construct?
- 4) **From these findings, what implications follow for the design and study of intentionally-mediated discursive spaces?**

CHAPTER 7

CONCLUSION: WHY DOES PRODUCTIVE SPECULATION AND THE PRACTICE OF FRAMING MATTER?

This final chapter has three main sections. First, I review the key questions guiding this study in order to summarize the key findings and takeaways. Then, I discuss the implications of this study (with the goal of answering the final research question) and I offer suggestions for future iterations. Finally, I discuss how the work may inform the first-year composition classroom, technologists and public spheres theorists.

Summarizing the Key Findings

I began this dissertation project with the goal of enabling ordinary people to engage in substantive dialogue that builds knowledge in and around the speculative. I designed a community dialogue and fashioned a tool that combined together to provide an experience for participants to seek out and make use of conflicting representations of potential realities of the future of driving. The co-constructed discourse that participants produced suggests that the conversation design, and the frames of acceptance and rejection in particular, enabled participants to make use of their “individual narratives and situated knowledge... alongside research claims and policy talk” to build knowledge that will potentially better equip them to weigh in on and help shape the future well-being of our communities (Flower, “Going” 147). As Crick and Gabriel remind us, inclusive public talk contributes to the health of the local public sphere (Habermas). Findings from the study reveal that the practice of framing helps scaffold participants’ thinking beyond

the good/bad binary and toward more realistically complex understandings and expectations of the future of driving. For example, one participant commented that “the frames guided discussion and added a well-rounded perspective that we individuals may not have otherwise taken into consideration” (Survey, Molly 3). Ultimately, this study demonstrates the power of effectively-designed deliberative experiences to build capacity, enabling ordinary people to engage with strangers to gain greater sense of their own and others’ “hidden, interpretive logics” and “situated knowledge” (Flower, *Community* 151). Technai support useful practices to teachers, students, scholars – all of whom need opportunities to critically assess the risks and rewards of our technology-laden lives. This research pushes our scholarship to focus on rhetorics that surround speculative public scientific controversies like the driverless car, in order to advocate for our individual and collective well-being.

Suggestions for Future Iterations

Finally, I conclude this chapter by suggesting few foci for future iterations. These recommendations address the unequal power dynamics that were created by my design’s excising of a facilitator, a traditional component of public literacy events like my community dialogue on the future of driving. I also suggest two ways that participants may engage with the frames during and after such a dialogue in order to extend the impact and usefulness of the experience.

Design of the Community Dialogue

Of the four design features that informed this study, none is more controversial than the first (bolded below).

1) Participants will engage in a conversation without a facilitator;

2) Participants will explore a speculative topic;

3) Participants will engage difference; and

4) Participants will leave with more than they came in with (value their experience).

By identifying such a feature, I was not suggesting that all valuable deliberative speculative public talk should or does happen without a facilitator. We see from many examples that facilitators have important roles to play, especially in terms of ensuring the participation of everyone present (Churg). Rather, my point was to test the capacity of the interface to provide scaffolding for purposeful talk without a facilitator. My study showed – and the participants themselves picked up on – the fact that participation varied; some, like Charlie and Arthur, spoke more than others, like Matilda and Samantha. Moreover, without a facilitator in the room, participants were not prompted or under pressure to focus and sustain deliberative dialogue, therefore there are many moments when participants do little more than make passing or superficial connections, as Charlie does in during Step 3, (i.e., “**I can see satire and elegy** kind of played into the scenario we're talking about, as well. Like [Inaudible 01:01:49]. **I can see epic**, you know, because the ... the lonesome road, you know, the adventure of it”). In light of this, future iterations of such literacy events should include facilitators who might work with participants before (to prepare them to share their situated knowledge and use the literate

strategies) and during the event to manage tasks like “keep a running record of the rivals the group generated” and “review and consolidate these rivals... giving the group members an opportunity to clarify their points” (Higgins, Flower and Long 25). With a facilitator in the mix, participants would be freer to explore the topic with their full focus, leaving the responsibility of capturing the trajectory of thought up to literacy leaders.

Uncirculated “Findings”

Although the community dialogue interface is available online and participants can revisit that content should they wish to, the transcript or the findings from the study are not available. As Flower explains in the context of her Think Tank study, participants can forget such “schema-violating information” whereas documentation that “reminds... clarifies, consolidates, and invites reflection” can benefit participants greatly when they return to their own spheres:

Documentation is a critical part of a Think Tank's knowledge-building activity. For the immediate participants, multicultural forums are contact zones using difference to create productive upset and transformed understanding. But people's memory for schema-violating information can be fragile. For participants, documentation not only reminds; it clarifies, consolidates, and invites reflection (Flower, *Intercultural* 266)

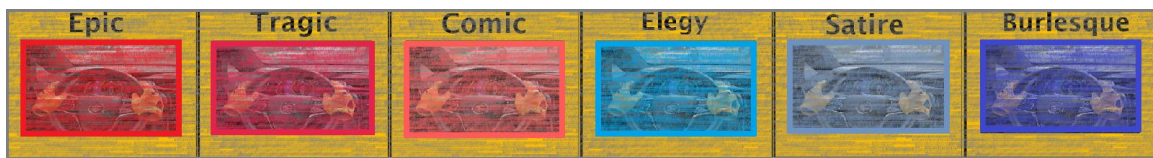
This additional material component could be addressed in future iterations, at least in part, by making the frames tangible. For example, the frames could be manifest as a die (as shown below) that participants could keep on their desk and roll in order to generate different perspectives/attitudes/readings of ideas. Or, the frames might make an attractive bookmark (see prototype below), which participants might use to keep their place in a book, but also to remind them to consider multiple perspectives/attitudes/readings of the content. If informed by the data collected in this study, these instantiations of the frames

may prove more readily useful if users could swap some frames for others (i.e., “We had a tough time starting discussions about some of the frames” (Survey, Charlie 12)).

Figure 13: Frame Die Early Prototype



Figure 14: Frame Bookmark Prototype



Note in Figures 13 and 14 above that the prototypes differ in use of color. The second prototype attempts to cluster the frames in terms of acceptance (reds) and rejection (blues). This design change is informed by the limitations of the study as well. That is, participants were not specifically directed to understand (or no evidence suggested that they understood) the frames as comprising a spectrum. By leveraging color as I do in the bookmark prototype, the relationships between the frames are highlighted. More

specifically, note how the “epic” and the “burlesque” frames, which constitute extremes are the “truest” colors or most vibrant. Then, the “tragic” and “satire” frames, which constitute warning signals use “matte” or muted colors compared to the others. Finally, the “comic” and “elegy” frames, which constitute the most human of the frames (concerned with laughter and sadness) lean toward pink and baby blue. These color-enforced relationships demonstrate further how the acceptance and rejection frames mirror and further serve to suggest why Kenneth Burke theorized the specific amount and type of frames.

Implications

This study has implications for the design and study of intentionally-mediated discursive spaces. Therefore, this section proceeds by addressing three audiences: the first-year composition classroom, technologists and public spheres theorists.

Implications for First-year Composition Classroom

The composition classroom is itself an intentionally-mediated discursive space that is plagued, for a lot of compositionists, by the theory/practice divide (Lynch). As Paul Lynch, in *After Pedagogy: the Experience of Teaching*, puts it, compositionists must find ways to resist the urge to systematize their practice or adopt a single pedagogy. In its place, Lynch proposes that compositionists use their *experience* “to proceed with no plan, no predetermined principles” in order to “embrace the contingent nature of writing” (Powell 1). That is, a teacher’s previous experience in the classroom can be recapitulated into future pedagogy such that “a lesson should never work three times” (Lynch 136).

Focusing on experience in this way allows the teacher to help students learn through experience. In this way, “‘experience’ is both the *how* and the *what* of teaching” (*emphasis mine*, Powell 3).

In the context of a writing classroom, we can facilitate students’ experiences by designing opportunities for them to speculate productively, “communicate with” and gain intercultural knowledge as participants did in this dissertation study (Hannah). The experience of co-constructing “highly diverse representation[s]... [which] lead to new socially constructed knowledge and action” may go far in terms of facilitating rhetorical invention (Flower “Intercultural” 242). Using the frames as *techne* for invention may increase the possibility and rigor of students’ ability to speculate with respect to stakeholders, especially considering that the frames were shown to build various kinds of knowledge (in this dissertation).

Implications for Technologists

In the introduction to this dissertation, I discussed two scholars whose work is focused on practically and productively using technology as an access-point of social progress. For example, Virginia Eubanks designs workshops she calls *popular technology*, which are discursive participatory spaces poised to build the capacity of everyday experts to participate in the information age. Eubanks’ events are an example of how technological literacy can be collaboratively co-constructed (via critical thinking). Similarly, Liza Potts studies *participatory culture*, which are ephemeral and grassroots discursive spaces that spring up online in response to disaster situations where people need to determine the wellbeing of their loved ones. Potts analyses social web tool use in crisis situations in order to identify patterns and to discuss how experience architects

might improve the structure and use of such technologies for participation. The architecture I designed and tested in this dissertation demonstrates one way that ordinary people can both build technological literacy (i.e., the levels of automation) and contend with the realities of our technology-laden lives (speculate productively about the realistically complex and diverse futures possible) simultaneously.

Implications for Public Spheres Theorists

Inclusive public talk contributes to the health of the local public sphere (Crick and Gabriel; Habermas). But people are often not compelled to participate in public life unless their lifeworlds – the internal logics that hold their day-to-day lives together – have been disturbed. Such disruption can spur people to shift their attention away from their private lives to discuss issues regarding the shared common good. Or, in the case of my study, participants found the community dialogue to in fact be enjoyable, safe and welcoming. Might others be compelled to attend community-building events that intentionally disturbs their lifeworlds for the purpose of scaffolding their thinking beyond the good/bad binary and toward more realistically complex understandings and expectations of topics like the future of driving? It may be that outcomes like those that Molly and Samantha articulate below hit the nail on the head in terms of the foundational values of public spheres theorist – that publics be diverse, competing and vernacular:

Molly: I loved this experience because of the range of opinions and cultural preferences across the group of participants. It made for wonderful discussion!

Samantha: I wouldn't have thought about most of the things we discussed as a group on my own. A lot of ideas came up that surprised me and were new to me and very different to my own personal ideas.

The usefulness of literate practices like Kenneth Burke's frames of acceptance and rejection cannot be understated in this regard. That is, the frames invite diversity and instantiate a space of shared reasoning from which participants can engage in negotiated and collaborative meaning-making. It is the kind of space that may never exist fully online for many reasons including Arthur's sense that good conversations tend to be face-to-face:

Arthur: Face-to-face you got those mirror neurons going so there's this immediate sympathy between people.

Facilitator: (affirmative) There's a willingness to ... To what? To talk to it out? To find common ground?

Arthur: That's right. (Interview 9)

However, if an online space is to enhance the rhetorical capacities of participants to reason together about their shared and uncertain future, then that space must be carefully designed with the goals and practices of such deliberation clearly in mind.

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