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Course of Study:	DS71031A
Title:	'Design and the Construction of Publics' in <i>Design Issues</i> , 25 (1), pp. 48-63.
Author:	Carl DiSalvo
Publisher:	The MIT Press
ISBN/ISSN:	0747-9360
Designated Person authorising scanning:	Rebecca Randall

Design and the Construction of Publics

Carl DiSalvo

In his 1927 book *The Public and Its Problems*,¹ John Dewey sought to address the possibilities and inhibitors of collective political action in then contemporary times. Characteristic of his pragmatic thought, Dewey was interested in addressing the question of how a public is constituted, and how the constitution of a public is thwarted, in order to expound a set of propositions delineating the potentialities and conditions of collective political action. For Dewey, the philosophical investigation of the public could not be divorced from the “facts” of everyday life, or the need and desire to accomplish change in the civic arena. His treatment of the public as a philosophical subject thus was grounded in the concrete situations, experiences, and materiality of everyday life. As such, *The Public and Its Problems* stood as a robust inquiry that countered abstract discussions of “the state,” and articulated the opportunities and challenges of participatory democratic practices.

Indeed, although *The Public and Its Problems* is nearly a century old, it is still relevant and productive today, particularly in the context of design studies. It is relevant because it links with contemporary world conditions through its pluralistic stance, endorsing a public that is broad, inclusive, and multiple. It is productive because it provides numerous points of intersection with both design theory and professional design activity that suggest novel courses for thinking about and doing design. Specifically, within *The Public and Its Problems* are leads to investigating and understanding the ways in which the products and processes of design intersect with publics. Of these leads, the notion that publics are “constructed” is perhaps most salient to contemporary design because it prompts a consideration of the means by which publics are assembled; begging the question: “How does, or might, design contribute to the construction of publics?”

Beyond academic inquisitiveness, this question is significant with regard to the renewed interest in the intersection of technology, aesthetics, engineering, and politics; which surfaces “design” and “the public” as fundamental topics requiring address. Since the late 1990s, there has been a proliferation of projects that examine and experiment with the capability and role of design (broadly construed) in increasing societal awareness, and motivating and enabling political action. This is evident in a diversity of endeavors, ranging from comprehensive exhibits such as *Massive Change*² to the

1 John Dewey, *The Public and Its Problems* (Athens, OH: Swallow Press Books, Henry Holt & Company, 1927).

2 The documentation for the exhibition *Massive Change* can be found online at www.massivechange.com, last referenced on November 26, 2007. A book, also entitled *Massive Change*, accompanied the exhibition. See, Bruce Mau and Jennifer Leonard, *Massive Change* (London: Phaidon Press, 2004).

work of individuals such as Natalie Jeremijenko³ and collectives such as Futurefarmers.⁴ Making visible and known the complex situations of contemporary society, so that people might take action on those situations, is a common objective among many such projects, echoing (if not always referencing) Dewey's concerns in *The Public and Its Problems*. Indeed, Bruno Latour and Peter Weibel's exhibition and accompanying book project *Making Things Public: Atmospheres of Democracy*⁵ began an inquiry into this subject. Invoking Dewey, Latour, and Weibel asked the question: "How are things made public?" The complimentary question, "How are publics made with things?" remains unaddressed—but it is exactly this question that also should be asked as the products and processes of design are increasing politicized and used for political ends.

The notion that publics are constructed, and that the products and processes of design might contribute to the construction of publics, provides a valuable theme to conceptualize, describe, and critique a range of contemporary projects. The purpose of this essay is to articulate one way design might contribute to the construction of publics; and from that articulation, provide grounds for future scholarly criticism and assessment of such projects and activities. This articulation serves two purposes. First, it provides a means for scholars in design studies to better understand and respond to one course of the possible relationships between design and collective political action. Second, it provides the opportunity to contribute to an emerging, reinvigorated discourse on the public occurring across the arts, humanities, and social sciences; and to offer a position from design studies that expresses a distinctly intimate knowledge of the made and the making of things.

The Deweyan Public

This inquiry into design and the construction of publics begins with a more thorough understanding of the Deweyan public. The assertion that publics are not a priori existing masses is central to the notion of the construction of publics. The public is not something that has been and always will be. It is neither universal nor an abstraction. Rather, for Dewey, the public is a specifiable and discernible entity that is inextricable from its conditions of origin. More precisely, for Dewey, the public is an entity brought into being through issues for the purpose of contending with these issues in their current state and in anticipation of the future consequences of these issues. This notion of the public is repeated throughout *The Public and Its Problems*:

The public consists of all those who are affected by the indirect consequences of transactions to such an extent that is it deemed necessary to have those consequences systematically cared for.⁶

3 Natalie Jeremijenko's work has been widely recognized throughout the art, design, and engineering worlds. Her project *Feral Robot Dogs* was included in the 2006 Cooper-Hewitt Design Triennial, *Design Life Now*, and is documented in the exhibition catalog curated and authored by Barbara Bloemink, Brooke Hodge, Ellen Lupton, and Matilda McQuaid, *Design Life Now: National Design Triennial 2006* (New York: Cooper-Hewitt Museum, Smithsonian Institution, 2007). For an overview of Jeremijenko's work, see her Website at: www.nyu.edu/projects/xdesign, last referenced on November 26, 2007.

4 Futurefarmers work has been recognized in numerous exhibitions, most notably in the 2003 Cooper-Hewitt Design Triennial, *Inside Design Now*, and is documented in the exhibition catalog curated and authored by Barbara Bloemink, Brooke Hodge, Ellen Lupton, and Matilda McQuaid, *Inside Design Now: National Design Triennial 2003* (New York: Cooper-Hewitt Museum, Smithsonian Institution, 2004). For an overview of Futurefarmers work, see their Website at: futurefarmers.com, last referenced on November 26, 2007.

5 Bruno Latour and Peter Weibel, *Making Things Public: Atmospheres of Democracy* (Cambridge, MA: MIT Press, 2005).

6 John Dewey, *The Public and Its Problems*, 15–16.

and

Those indirectly and seriously affected for good or for evil form a group distinctive enough to require recognition and a name. The name selected is "The Public."⁷

and

Indirect, extensive, enduring and serious consequences of conjoint and interacting behavior call a public into existence having a common interest in controlling these consequences.⁸

The bond of a public to its conditions of origin is an inevitable outcome of the situatedness of publics. Publics arise from, and in response to, issues that are qualified by the context in which they are experienced. This has the effect of producing multiple publics from a single issue. For example, as Jason Corburn describes in *Street Science* (an ethnography of the intersections of local knowledge and community health planning), Hasidic Jews and Latinos in the same Brooklyn neighborhood facing the same environmental injustice responded very differently to the circumstances and consequences due to differences in cultural attitudes concerning the open discussion of health matters.⁹ Each of these groups would, for Dewey, be a different public, and this scenario exemplifies how a single, even shared, issue might result in a multiplicity of publics. In the same book, Corburn also discusses the relevance of different visual treatments of maps and spatial data, and how these different visual treatments impacted the construed efficacy of the artifacts by novice cartographers and professional health researchers.¹⁰ The diverse readings of the same artifact reveal differences in cultural assumptions of knowledge and truth, and consequently, multiple publics, which are delineated by their different interpretations of a shared representation.

In addition to the notion that publics are situated and multiple, an important characteristic of Dewey's public, which distinguishes it from other theories and refreshes its potency today, is that the Deweyan public is not exclusive to a particular class or social milieu. A Deweyan public avoids having to manage the negotiations between a bourgeois and proletariat public required in navigating the work of Habermas¹¹ and Negt and Kluge;¹² arguably the other theorists whose work on the public has had the most significant impact on contemporary discourse. Although, in spirit, Habermas shares much with Dewey; the "public sphere," as Habermas depicts it, is more structured and confined than a Deweyan public. Indeed, the many and often contestational public spheres of Negt and Kluge are closer to the Deweyan public. The benefit of Dewey is that this tension between the bourgeois and proletariat is avoided through his stance of pluralism, which does not discriminate among the wide-ranging possible places of and actors within a public.

7 Ibid., 35.

8 Ibid., 126

9 Jason Corburn, *Street Science* (Cambridge: MA: MIT Press, 2005).

10 Ibid.

11 Jurgen Habermas, *Structural Transformation of the Public Sphere* (Cambridge, MA: MIT Press, 1989).

12 Oskar Negt and Alexander Kluge, *Public Sphere and Experience: Toward an Analysis of the Bourgeois and Proletarian Public Sphere* (Minneapolis, MN: University of Minnesota Press, 1993).

The Constructed Public and Its Problems

Publics are constructed in the sense that they are brought together through and around issues. But the issues themselves do not exhibit the agency to assemble people. Rather, it is the actions and effects of others communicating issues and their consequences, that prompt a public to come into being. This act of communication is both a problem for the construction of publics and a place where design contributions occur.

For Dewey, the problem of the public was not a problem of definition—it was a problem of action. The question of *what* constitutes a public served to highlight the concern of *how* a public is—or is not—constituted. The challenge of public action is traced to the inability of a public to form: before a public acts it must come into being. This inability to form, or form effectively, is not because of a lack of issues, but rather because the issues resist identification and articulation, leaving publics unformed and tentative. As Dewey states:

An inchoate public is capable of organization only when indirect consequences are perceived, and when it is possible to project agencies which order their occurrence. At present, many consequences are felt rather than perceived; they are suffered, but they cannot be said to be known, for they are not, by those who experience them, referred to their origins. It goes then without saying that agencies are not established which canalize the streams of social action and thereby regulate them, Hence publics are amorphous and unarticulated.¹³

Perceptive of Dewey in 1927 and of profound relevance today, particularly in the context of design, is the effect of technology on the formation of publics.

But the machine age has so enormously expanded, multiplied, intensified, and complicated the scope of indirect consequences, have formed such immense and consolidated unions in action, on an impersonal rather than community basis, that the resultant public cannot identify and distinguish itself.¹⁴

Little seems to have changed since 1927, except perhaps that the conditions of concern expressed by Dewey have been amplified, or at least seem to be more broadly “felt” to use his terminology. The reach and effects of technology are so pervasive and complicated that the untangling of source, course, and consequence has become a daunting imperative. It is precisely within this contemporary socio-technical mess of people, technologies, and objects (a mess that Dewey’s theory of the public is quite apt for negotiating) that this inquiry into design and the construction of publics is situated.

By understanding the role of issues to publics and their

13 John Dewey, *The Public and Its Problems*, 131.

14 *Ibid.*, 126

formation, we may now more precisely inquire into design and the construction of publics. Following from Dewey, a fundamental challenge in the formation of publics is making the conditions and consequences of an issue apparent and known. One way that design might contribute to the construction of publics is by the application of designerly means to this task. But what are these means, and what about them makes them designerly?

Identifying Design Tactics

Design tactics are designerly means directed towards the construction of publics. Tactics, in this case, references the work of de Certeau and his discussion of tactics and strategies in *The Practice of Everyday Life*.¹⁵ To de Certeau, strategies are expressions and structures of power exerted by institutions (broadly construed) that attempt to prescribe behavior and courses of action. In contrast, tactics are means developed by people to circumvent or negotiate strategies towards their own objectives and desires. In a strict sense (that is, adhering closely to de Certeau), these designerly means are both strategies and tactics.¹⁶ But emphasizing their tactical qualities is valuable for producing fitting descriptions. Framing the designerly means directed towards the construction of publics as *tactics* broadens the scope of who participates, how, and in what contexts, because design tactics may be used in projects outside of what we commonly consider design, by people other than we commonly consider designers. While design tactics draw on familiar design activities and forms (that is, they reference strategies), they are not the rote application of existing techniques. More often, they are adjustments to, appropriations, or manipulations of design products and processes to accommodate purposes beyond the common, often historically and professionally constrained, purposes of design.

Two such design tactics can be readily identified. These are the tactics of “projection” and “tracing.” Each speaks to Dewey’s concern for making the conditions and consequences of an issue apparent and known such that a public may form. In addition, while each tactic is grounded in the activities and forms of design, each interprets and extends the familiar products and processes of design, producing novel artifacts and events contributing towards the construction of publics.

The Tactic of Projection

Within the context of the construction of publics, the tactic of projection can be defined as the representation of a possible set of future consequences associated with an issue. Projections are based in facts (or least information considered fact)—they are not fictions. Projections are an advanced indication of what might be, informed by knowledge of the past and present, and rendered by means of a skilled supposition of how the “yet to come” might occur and to what effect.

15 Michel de Certeau, *The Practice of Everyday Life* (Berkeley, CA: University of California Press, 1984).

16 For some, labeling these designerly means as tactics may seem to be a misuse of de Certeau’s theory. Admittedly, these designerly means often are produced from within or in conjunction with institutions of power, thus conflicting with de Certeau.



Figure 1 (left)
Poo Lunchbox, from the exhibit *Is This Your Future?* Photo courtesy of Anthony Dunne and Fiona Raby, © 2004.



Figure 2 (right)
Poo Scenario from the exhibit *Is This Your Future?* Photo courtesy of Jason Evans, © 2004.

The tactic of projection is grounded in the established design practice of scenarios. But in the context of the construction publics, projections are not developed to suggest or direct possible courses of action, as is often is the purpose of scenarios and similar techniques. The purpose of a projection is to make apparent the possible consequences of an issue. In a recent essay, Margolin makes a useful distinction between predictive and prescriptive scenarios.¹⁷ While predictive scenarios suggest what *might* happen, prescriptive scenarios “embody strongly articulated visions of what should happen.”¹⁸ Within Margolin’s framework, the tactic of projection is closest in spirit to a predictive scenario. In addition to the nonprescriptive quality of a projection, the tactic is further characterized by the proficient use of design to express the range and complexity of possible consequences in an accessible and compelling manner. It is the particularities of this proficiency that qualify the projection as a design tactic, as opposed to a strategy or technique of planning or marketing.

The exhibit *Is This Your Future?* developed by Anthony Dunne, Fiona Raby, and Onkar Singh (with photographs by Jason Evans) is an exceptional case in point of projection. As designers and educators, Dunne and Raby are well known for their development of “Critical Design,”¹⁹ which they regard as an alternative to mainstream design in that the goal is the use of design to expose and explore the conditions and trajectories of contemporary design rather than the utilitarian problem-solving or surface-styling that has historically characterized design (particularly industrial design). They have advanced this agenda through a series of books and

17 Victor Margolin, “Design: The Future and the Human Spirit,” *Design Issues* 23:3 (Summer 2007).

18 Ibid., 6.

19 See Anthony Dunne and Fiona Raby, *Design Noir: The Secret Life of Electronic Objects* (Basel: Birkhäuser Press, 2001) and Anthony Dunne, *Hertzian Tales: Electronic Products, Aesthetic Experience, and Critical Design* (Cambridge, MA: MIT Press, New Edition, 2006).



Figure 3
Teddy Bear Blood Bag, from the exhibit *Is This Your Future?* Photo courtesy of Anthony Dunne and Fiona Raby, © 2004.

high-profile projects, as well as curriculum developed as part of the Design Interactions program at the Royal College of Art. Recently, Dunne and Raby have begun to use the phrase “Design for Debate” to describe their work. This does not signal a move away from a critical stance, but provides a useful elucidation of their approach and intentions.

In 2004, Dunne, Raby, and Singh mounted an exhibition at the Science Museum of London examining possible future courses and outcomes of energy research and the role of individuals in the everyday production of energy. The result was surprising. Entitled “Is This Your Future?” Dunne, Raby, and Singh developed three scenarios grounded in contemporary scientific research that projected unconventional and yet imaginable futures. In “Hydrogen,” people are responsible for the production of their own sources of energy, for example hydrogen. In “Human Poo,” children are expected to save their bodily waste as a source of energy (Figure 1 and 2). And in “Meat Eating Products,” energy is harvested from the killing of pets (Figure 3). As Dunne and Raby state in their project documentation, while each of these scenarios may at first seem outlandish, they are in fact no more outlandish than the more typical “Wonderful World of Tomorrow” exhibits which tell a tale (perhaps more unrealistic) of the glorious opportunities of biotechnology:

The exhibit is aimed at children between the ages of 7 and 12. Everywhere they look they will see images showing how bright our technological future will be once we embrace new energy sources like Hydrogen. But things are not so simple with every new technology there are of course other consequences—economic, cultural and ethical. With this project, we wanted to encourage children to think about the implications of three different technologies, all real, but some more likely to happen than others.²⁰

The scenarios in *Is This Your Future?* exemplify the tactic of the project in that they employ design to express possible outcomes of pursuing current themes in the science and technology of energy production. Considering them within the conceptual frame of the tactic of projection provides a means for understanding, or at least inquiring into, how they contribute to an increased perception of the issues of energy production and, more broadly, biotechnology. One particularly relevant feature of the projections is that they present the interwoven spread of possible consequences, each of which, in turn, may become an issue in and of itself. For example, although one may be in favor of fossil fuel alternatives, the prospect of using living organisms for energy may be repugnant: in this case the issue of alternative energy intersects with, or gives rise to, issues pertaining to the treatment of animals. Thus, a more nuanced read of these projections, beyond a simple emotional response to the abjectness of the scenarios, surfaces future ethical quandaries

²⁰ Excerpted from an interview with Anthony Dunne and Fiona Raby by Regine Debatty for We-Make-Money-Not-Art. Available online at: www.we-make-money-not-art.com/archives/009389.php, last referenced on November 29, 2007.

within energy production and biotechnology, prompting awareness of and reflection on what might be considered in Dewey's terms the "indirect consequences"²¹ of an issue.

The specifics of how design is employed in this project are significant. The scenarios constructed by Dunne, Raby, and Singh are striking exemplars of the tactic of projection because of the thorough and expert use of design skill in interpreting and extrapolating current scientific and technological research. Each is presented through a set of well-crafted product models, staged photographs of use, and accompanying text (See Figures 1, 2, and 3 again). The thorough and expert use of design skill suggests a defining characteristic of a designerly approach to the construction of publics: the activity of making apparent is pursued with sophisticated attention to the aesthetic characteristics of possible future conditions. The products models are made to appear realistic and alluring. The formal qualities of the models and photographs—the choice of materials, colors, shapes, and composition—are deftly fashioned. The projection is plausible and persuasive because the representations are so easily consumed in the present (they are visually striking) and imaginable to be consumed in the future (they appear like we envisage such "real" products would appear). It is in this sense that the use of the phrase "rendered by means of a skilled supposition" is so appropriate to describe the tactic of projection. The design tactic of projection is distinct by its application of the ability of representation and also by the thorough knowledge of the processes and trends of making designed things. It is through the intimate understanding of how complex ideas are transformed into products, services, and artifacts that the designer is able to persuasively infer what that future might be like.

The Tactic of Tracing

As a tactic, tracing takes on dual meanings. First, tracing is a following back to what Dewey calls "the origins of an issue."²²Inherent in tracing is the activity of revealing, of exposing the underlying structures, arguments, and assumptions of an issue. Second, tracing is an activity of "mark-making." To trace is to follow and record the presence and movement of an artifact, event, or idea. Within the context of the construction of publics the tactic of tracing can be defined as the use of designerly forms to detail and communicate, and to make known, the network(s) of materials, actions, concepts, and values that shape and frame an issue over time.

Communication design, inclusive of information and graphic design, is the most immediate place for locating the tactic of tracing within established design fields. Popular authors such as Tufte and Wurman have highlighted the pervasiveness of communication design in contemporary society; and scholars such as Buchanan, Kauffer, and Tyler have examined the rhetorical strategies and uses

21 John Dewey, *The Public and Its Problems*, 131.

22 Ibid., 131.



Figure 4 (top)
Workbook packet from the *Zapped!* project.
Photo courtesy of Preemptive Media.

Figure 5 (bottom)
Documentation of *Zapped!* workshop. Photo
courtesy of Preemptive Media.

of communication design.²³ The tactic of tracing builds upon these discussions and activities, adapting them toward the construction of publics and, in the process, opening them to new contexts and effects. More specifically, the tactic of tracing is characterized by the use of designerly forms to creatively express the histories, discourses, and techniques that constitute an issue; in ways that foster knowledge through engagement. Increasingly, these forms reach beyond the common artifacts of communication design. In this way, tracing both connects with and extends contemporary design, particularly the areas of participatory and service-oriented practices that embrace forms of engagement and exchange beyond the traditional object.

The project *Zapped* by the collective Preemptive Media is a striking example of the tactic of projection. In part, it is striking because it exemplifies the ways design tactics are being used effectively, even furthered, outside of what we might commonly think of as a design project, thus reinforcing the notion of a tactic as an adjustment to, appropriation, or manipulation of design products and processes. As a collective, Preemptive Media is more aligned with art than design. However, the work of Preemptive Media demonstrates the blurring of contemporary practices between art and design, particularly in the context of socially-engaged work. This blurring results in a productive confusion between art and design in that it makes it easier to exchange forms, methods, and effects. Such exchanges are particularly fruitful to design, because arts practices and discourse have made much more significant inroads into the issues and sites of the public over the past several decades than has been witnessed within design.

Zapped is a project to raise awareness concerning Radio Frequency Identification (RFID), an emerging technology that allows objects and people to be tracked by means of low-cost digital "tags." RFID has been, and continues to be, a contested technology; perhaps useful for the tracking of palettes through the industrial distribution system, but problematic when applied to the tracking of school children as was proposed in California in 2004.²⁴ According to Preemptive Media, the goal of *Zapped* is to enable others "to learn about and respond to"²⁵ RFID. To these ends, the project is comprised of multiple artifacts and formats including a keychain RFID detector, a workbook, an informational video, and a workshop that integrates these artifacts as well as providing an overview presentation on the history and current use of RFID, and an opportunity for hands-on engineering activities (Figures 4 and 5).

Each of these artifacts and formats presents information about RFID, often through complementary means. For example, through both the keychain RFID reader and the workbook, the basic operating requirements for RFID are explained and diagrammed. The workbook includes an illustrated timeline outlining the development and use of RFID, a brief taxonomy of relevant terms, and a simple game in which participants try to identify which

23 See Edward Tufte, *Beautiful Evidence* (Cheshire, CT: Graphics Press, 2006); Richard Saul Wurman, *Information Anxiety 2* (Indianapolis, IN: Que Publishing, 2000); Richard Buchanan, "Design and the New Rhetoric: Productive Arts in the Philosophy of Culture" in *Philosophy and Rhetoric* 34:3 (2001); David Kaufer and Brian Butler, *Rhetoric and the Arts of Design* (Mahwah, NJ: Lawrence Erlbaum, 1996); and Anne Tyler, "Shaping Belief: The Role of Audience in Visual Communication," *Design Issues* 9:4 (1992).

24 In 2004, a California school proposed using RFID to track students. For a general overview, see Kim Zetter, "School RFID Plan Gets an F" in *WIRED* [Website] February 10, 2005, available online at: www.wired.com/politics/security/news/2005/02/66554, referenced on December 13, 2007.

25 See the *Zapped* project Website at: www.zapped-it.net/, last referenced on November 28, 2007.

Figure 6

RFID Fob from the *Zapped!* project. Photo courtesy of Preemptive Media.



common household products are embedded with RFID. Through and across these artifacts, the applications of RFID in national security agendas, industrial operations, and consumer products are detailed, highlighting how they overlap and influence each other. Each artifact can be considered a separate trace, produced by Preemptive Media through research and production, that reveals and records the distinctive networks of influence that give RFID its known form. Each artifact is a separate “made-mark,” capturing and expressing the dynamic multifaceted existence of RFID as a technology and idea, and perhaps most important, capturing and expressing RFID as an issue.

The workshop format employed by Preemptive Media is particularly significant because it extends the revealing and recording of the trace into a novel format. The workshops utilize the artifacts to direct participants in an event that allows them to participate in the process of tracing through hands-on activities. For example, the keychain RFID detector is made by a simple modification of an existing key “fob” which participants in the workshop make themselves (Figure 6). Through the workshop, *Zapped* produces a unique moment of engagement with RFID as an issue, bringing together, but also extending the artifacts and processes of tracing into an event.

The *Zapped* project is exemplary of the tactic of tracing because of its use of a span of designerly forms to detail and communicate the expansive and interrelated histories, discourses, and techniques that structure RFID. On a simple level, these forms are designerly in that they draw from design artifacts such as information graphics and engineering prototypes. But in a more nuanced fashion, we can consider them designerly because they make an issue known by making it experientially accessible. The workbooks, videos, and prototypes allow us to read, see, touch, interact with, and even

manipulate RFID. The network(s) of materials, actions, concepts, and values that shape and frame the issue are not intellectualized and distanced: they are made tangible and at hand. The fact that *Zapped* may not be a traditional design project does not negate or lessen the ability or value of examining the project through the frame of a design tactic. The design tactic of tracing is not defined by context, but by method and intent; by the crafted transcription of complex information into comprehensible forms that appeal to our senses. These forms designed and developed by Preemptive Media attempt to make known a complex subject matter, in this case RFID, in such a way that it can become an issue; that is, in such a way that “the immense and consolidated unions”²⁶ that simultaneously muddle and define RFID are made perceptible and understandable.

The Temporal Stance and Discovery: Relational Grounds of Projection and Tracing

In addition to describing projection and tracing as tactics distinct from one another, it also is worthwhile to probe and discuss them in relation to one another. Understanding their relations better enables comparative descriptions of the tactics and projects, expanding the grounds for future scholarly criticism and assessment. There are two immediately identifiable relational grounds shared by projection and tracing: the temporal stance and discovery.

The Temporal Stance

The tactics of projection and tracing can be understood and described with regard to the temporal stance of each; that is, the way they orient towards the past or future. Projections begin in the present and then look to the future, making it visible. In contrast, tracings begin in the past and then bring that past to be experientially known in the present. These differing orientations reflect Dewey’s dual concerns with “the origins of an issue”²⁷ and its “indirect consequences.”²⁸ Such differing temporal orientations provide a clear basis for comparative descriptions. But in describing and critiquing these tactics, it also is important to understand that the temporal stance is not a static pose. Rather, it is an active dialectic referencing the past or future in order to attend to issues in the present.

Tactics reference the past or future because such reference provides the contextualization to current conditions necessary to identify and cast these conditions as issues. A condition is an issue in part because of its historical obfuscation or indeterminate future effect. So, to depict the present alone would be insufficient. Likewise, while projection and tracing respectively glance forward and back, it also would be a mistake to characterize them as practices of forecasting or history. Both are rooted in the now. The objective of a contribution to the construction of publics is to aide in making something occur in the present, not to provide the props for a future happening, or simply illuminate the past. Because issues are situated, the framing and presentation of an issue is reflexive of the current

26 John Dewey, *The Public and Its Problems*, 126.

27 Ibid., 131.

28 Ibid.

conditions. Projections are an image of the future given what we know today, and tracings make the past relevant to a contemporary context. Thus, projections and tracings require a balance and flow between the past, present, and future to maintain the temporal stance. Descriptions and critiques of projects that employ these tactics should examine this balance and this flow as grounds for evaluation and judgment.

Discovery

Tactics also share the activity of discovery as the basis for contributing to the construction of publics. Issues are rarely given, and if they are given, tend to be so in the broadest of terms, still requiring research and elucidation to make them apparent and known. Through the process of discovery, issues are recognized and explored, and their factors and effects are articulated. Although Dewey does not address discovery in *The Public and Its Problems*, we can look to another work, *Logic: The Theory of Inquiry*,²⁹ to frame discovery in a Deweyan perspective. Discovery occurs through the process of inquiry, which Dewey defines as “the controlled or directed transformation of an indeterminate situation in its constituent distinctions and relations as to convert the elements of the original situation into a unified whole.”³⁰ The indeterminate situation is the conditions of the issue, in their “expanded, multiplied, intensified, and complicated”³¹ form. Discovery is thus characterized by controlled and directed research, analysis, reflection, and synthesis, that produces a whole that is able to be made apparent and known.

The specific procedures of discovery are influenced and differentiated by the temporal stance and the audience, providing yet further grounds for comparative descriptions. Both projection and tracing begin with an investigation of the current state of knowledge, activities, and technologies in a given field or subject. But projection also requires investigation into how that knowledge, activities, and technologies change and progress over time, so that plausible anticipations of future effects might be made. For example, the projections created by Dunne, Raby, and Singh in *Is This Your Future?* required an understanding of the current state of research in the area of biotechnology, specifically bioenergy production and use. Furthermore, it required an understanding of the patterns and trajectories of product development within biotechnology. Tracing, in contrast, requires investigation into how a current state of affairs came into being and operates, in order to produce a thorough contemporary mapping of an issue. One way this is achieved is by cataloguing the varied discursive, material, and cultural factors that give shape to an issue. The tracings within *Zapped* exemplify this, since they capture and reflect the interplay of security, industrial, consumer, and engineering forces present in RFID.

Of course, the audience also plays a fundamental role in the process of discovery towards designerly contributions to the

29 John Dewey, *Logic: The Theory of Inquiry* (New York: Holt, Rinehart and Winston, 1938).

30 *Ibid.*, 104–105.

31 John Dewey, *The Public and Its Problems*, 126.

construction of publics. Given that tactics are designerly means for the identification and articulation of issues; such that they might be known enough to enable a public to form around them; a central concern is to discover what forms of expression are most appropriate and compelling for the those people and institutions the tactic is intended to communicate with. This process is familiar to design, and there is a wealth of scholarship to address the endeavor, particularly in the research literature concerning human-centered communication design.³² But the lessons available from art also should be brought to bear on the topic of discovery. Particularly since the mid-1970s, artists have developed innovative ways of communicating and engaging with the public. Documentation and discussion of these activities can found in the scholarship concerning public art, as well as the recent discussions of relation and dialogical aesthetics³³ The role of art in discovering expressive forms that might bring a public into being was not lost on Dewey for, as he stated, “Artists have always been the real purveyors of news, for it is not the outward happening itself which is new, but the kindling by it of emotion, perception, and appreciation.”³⁴

Within design, discovery is certainly not limited to the construction of publics. Discovery appears under many guises in design practice, but is most often cast as a component of “problem definition,” in which the designer expresses to a client what the designer has determined is the most pressing matter to be solved or remedied through design. While there are similarities between simple notions of problem definition and discovery, it is important to disambiguate them as activities. Within the context of the construction of publics, the issue—that thing which is discovered—is not necessarily presented in a manner that asks for a solution or remedy by design. Its discovery does not *de facto* imply that design be a component of addressing the issue. In contrast, problem definition often is a self-serving, self-perpetuating activity to solidify the current position and extend the reach of professional design practice. Problem definition, as commonly conceived, implies the identification of a matter that *can* and *should* be addressed by design. However, within the context of the construction of publics, the role of design may stop at the discovery and articulation of the issue—identifying and expressing the issue does not necessarily perpetuate the role of design and the designer. For example, the exhibit *Is This Your Future?* does not suggest that design be employed to do anything to thwart or enable the possible future states depicted. It is sufficient and complete for the projections simply to be proffered.

Establishing the Grounds for Criticism and Assessment

The tactics of projection and tracing name and outline how designerly means might be applied in the identification and articulation of issues, such that those issues might be known enough to enable a public to form around them. But more than identifying and

32 For example, see Jodi Forlizzi and Cherrie Lebbon, “From Formalism to Social Significance in Communication Design,” *Design Issues* 18:4 (Autumn 2002).

33 For recent overviews of public art, see W. J. T. Mitchell, *Art and the Public Sphere* (Chicago: University of Chicago Press, 1992) and Tom Finkelpearl, *Dialogues in Public Art* (Cambridge, MA: MIT Press, 2001). For a discussion of relational and dialogic aesthetics, see Nicolas Bourriaud, *Relational Aesthetics* (Paris: Les Presse Du Reel, 1998) and Grant Kester, *Conversation Pieces: Community and Communication in Modern Art* (Berkeley, CA: University of California Press, 2004).

34 John Dewey, *The Public and Its Problems*, 184.

describing such projects, a goal of this essay is to provide the grounds for criticism and assessment in order to support and foster scholarly inquiry. This criticism and assessment begins within design studies with an investigation of the tactics and those features that make them designerly, but also extends to include other disciplines that might comment on the efficacy of design in the political realm.

Projects first can be examined against the given definition of each tactic as a start for criticism. For example, for the tactic of projection, relevant questions to begin a critique would be: "How and how well are the aesthetic characteristics of possible future conditions portrayed?" and "Do the projections evidence an intimate understanding of how complex ideas are transformed into products, services, and artifacts?" Given the tactic of tracing, corollary questions would be: "How and how well are designerly forms employed to make known the network of histories, discourses(s), and techniques that shape and frame an issue over time?" and "Were structures, arguments, and assumptions of a given issue newly revealed and made more accessible?" Beyond review and appraisal of individual projects, answering the question of "How" would reveal shared rhetorical devices and themes employed toward the construction of publics, which could be further critiqued and assessed across projects and subject matter.

Projects also can be critiqued and assessed by closely examining how the process of discovery, in terms of both the content and the mode of expression, is reflected in the work. For example, as previously noted, the projections in *Is This Your Future?* required an understanding of the current state of research in bioenergy production and use. One course of assessment would be to ask if the projections evidenced this understanding, that is, if the reference to the current state research in bioenergy production and use could be located within the projections. In the case of *Is This Your Future?* the answer is yes. The projection "Meat-Eating Products" directly references recent research into the use of animal matter as a power source for robots.³⁵ Another course of assessment would be to ask if the form of expression was appropriate to the audience. Again, in the case of *Is This Your Future?* the answer is yes. Though adults may find the exhibition unduly grotesque, numerous researchers in childhood education have argued that such approaches are wholly appropriate and valuable to support learning among youth, who were in fact the audience.³⁶ While such examinations of *Is This Your Future?* are plainly too abrupt as examples, they suggest how such critique and assessment of the content and form of expression in the context of discovery might progress.

Integrating and collaborating with other fields and perspectives would broaden and bolster the inquiry, particularly towards genuinely assessing the effect of design. Assessing the effect of design requires asking the challenging question: "Does the contribution of design to the construction of publics really

35 For example, the Ecobot project at the University of Bristol Intelligent Autonomous Systems Laboratory has developed a robot that is powered by dead flies, and another that is designed to capture and subsist on slugs. For an overview, see the Ecobot project Website at: www.ias.uwe.ac.uk/Robots/slugbot.htm, last referenced on December 11, 2007.

36 For a popular overview of this position, see Gerald Jone, *Killing Monsters: Why Children Need Fantasy, Super Heroes, and Make-Believe Violence* (New York: Basic Books, 2003).

matter?" and, if so, "When?" and "How?" To address these questions requires expertise outside of what is commonly found in design studies. But numerous fields with existing ties to design, such as the learning sciences, science and technology studies, and public policy, are well-equipped theoretically and methodologically to take up these questions. Assessing the effect of design tactics is particularly important in determining what "works" and what counts as "working" (i.e., how do we know that a specific intervention or engagement has had an effect, or what effect it has had). For example, without summative assessment, we cannot comment on the actual effect of the projects *Is This Your Future?* or *Zapped* we can only offer a reflective critique. Beyond evaluating, and potentially improving, the efficacy of design tactics, assessment is valuable because it informs broad arguments in design studies. Specifically, through assessment, claims made concerning the effects of design are made accountable; enabling broader arguments to be made, or refuted, regarding the value and place of design in increasing societal awareness, and motivating and enabling political action.

Conclusion

This article served to begin an inquiry into design and the construction of publics by describing the Deweyan public, identifying and describing two design tactics, and establishing initial grounds for scholarly critique and assessment. As both a subject of scholarly concern and practical activity, the construction of publics is increasingly pertinent to contemporary design studies, warranting ongoing inquiry. As has been illustrated above, a Deweyan notion of the construction of publics serves well as a framing concept to support the description and analysis of a diversity of designerly activities and forms. Through a discussion of diverse tactics and common grounds, we can begin to ask, and answer, the question of how the processes and products of design might serve in discovering and articulating the issues that spur a public into being.

There are several issues and limitations within this essay that should be acknowledged now, with the hope of prompting future research. One limitation is the number and kinds of projects chosen for examples. Admittedly, these projects are highly aestheticized and contained. The choice of these projects was not arbitrary, but calculated to ease into the inquiry. Grounding the discussion in relatively familiar design objects that were visually strong and conceptually provocative provides an accessible and compelling beginning. In addition, the scale of these projects illustrate that contribution to the construction of publics need not be a mammoth endeavor. Small interventions and engagements are possible and productive, and worthy of scholarly attention. Nonetheless, to develop a more robust understanding of design and the construction of public projects it is necessary to examine projects that are less aestheticized and are expansive in terms of time, breadth of audience,

and range of contexts. A pertinent example is the “Design of the Times” program directed by John Thackara that seeks to use design as a means to spark discussion and action concerning alternate relationships with the environment on a regional scale.³⁷

Ethics is another issue requiring attention. The explicit and intentional use of design processes and products towards the construction of publics is certain to raise concerns. Visions of visually sophisticated and experientially sculpted fascist states, propaganda, and misinformation come to mind. By the contributions of design, will publics inherit problematic qualities of being “engineered” or “commodities”? Such concerns are legitimate and substantial. The subject of design ethics should go hand-in-hand with the construction of publics, and have a significant place in future discourse.

Finally, there is the question of action: is facilitating action part of the subject and activity of the construction of publics? Certainly, providing the means for taking action is an important objective of design, and there are many examples of projects in which enabling social or political action is the central purpose. But perhaps the facilitation of direct action should be considered as a separate endeavor, in both theory and practice, from the construction of publics. Bringing to awareness (i.e., making apparent and known), is a significant objective and task itself, deserving thorough consideration. This is not to shirk responsibility or abandon opportunity for taking action, but rather to give the construction of publics as a framing concept and activity the acute attention necessary to develop thorough research and scholarship.

37 For more information on *Design of the Times*, see the project website at: www.dott07.com/, last referenced on December 11, 2007.