CHAPTER 2

Becoming Maker: Creating Transmedia Knowledge

Fig. 2.1 Still from "Cancer and Developing Countries." Kristel Joy Yee Mon. Video for vlog discussing graduate research in biomedical sciences. Cornell University (2017)

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From Consumers to Makers

We consume media all the time: images, texts, and music flow through our smartphones and computers, but few of us become confident media-makers. *Yet digital culture is a maker culture*, which means becoming both a critical consumer and a creative producer of different media forms. While we may capture and share photos and movies, our computers and hand-held devices come loaded with software for editing and manipulating media that most people ignore, and the Internet offers an array of free website platforms that many do not even know about. Critical design is all about analyzing and creating media—from essays to videos to websites—and it begins with *becoming maker* (Fig. 2.1).

Traditionally, thinkers and makers have been sharply separated, with universities producing students who think and technical colleges producing students who do. Obviously, students at technical colleges think and those at liberal arts colleges and universities do, not only in Art, Physics, and Engineering but also English, History, and Sociology. But with the rise of maker culture, DIY movements, and digital culture more generally, the activities of designing and creating are blurring the boundaries between thinking and doing, as well as between different schools and disciplines. Innovation, invention, creativity—these activities are not restricted to entrepreneurs, inventors, and artists but are becoming democratized. Digital media accelerates this democratization process, and the role of critical design is to ensure that critical thinking remains a crucial dimension of democratizing digitality. To these ends, StudioLab extends critical thinking beyond writing to other media forms. Its critical design practices enable one to become a maker of transmedia knowledge.

But critical design is not just about making, it is about *why and for whom* we make—to express an idea? to move others? to change the world? Do we make only for specialists or also for community members, policy-makers, and the general public? And critical design is also about *how* we make—effectively? efficiently? efficaciously? sullenly or joyfully? In one medium or many? In traditional genres and emerging ones? *Critical design asks: What are we making, how sustainable is it, and why and for whom are we making it in the first place?*

Critical Design 101: Making Media

In order to democratize digital media, this chapter introduces the forms, activities, spaces, and one of the design frames at the heart of the StudioLab pedagogy. To help both faculty and students become makers within their fields, we start by exploring some tutor websites drawn from different disciplines. Tutor sites and other tutor materials offer heuristics, resources that can help one generate transmedia knowledge. We can learn from both their content and their form: don't steal or copy as much as emulate and create in their spirit.

Critical Design: Dunne and Raby

The first tutor site is that of designers Anthony Dunne and Fiona Raby, whose 2005 manifesto 'Towards a Critical Design' helps launch critical design as field by situating it precisely between *episteme* and *doxa*, expert discourse and popular media. This is the shared sweet spot of transmedia knowledge and critical design. Written to accompany Dunne and Raby's show *Consuming Monsters: Big, Perfect, Infectious* which dealt with issues surrounding biogenetics and designer babies, their manifesto argues that 'many issues are already being examined by ethicists and government organizations, the results usually take the form of highly technical, almost philosophical reports. When they are reported in the popular media it is often alarmist and sensational.'[1] At the same time, they contend that the potential of art, film, and literature to grapple with biogenetics and designer babies is undercut by their fictionalization and overdramatization of such issues. They counter: 'Products however, as a special category of object, can locate these issues within a context of everyday material culture. Design today is concerned with commercial and marketing activities, but it could operate on a more intellectual level, bringing philosophical issues into an everyday context in a novel yet accessible way.'[2]

[1] Anthony Dunne, and Fiona Raby, "Critical Design FAQ," retrieved April 1, 2016, http://www.dunneandraby.co.uk/content/bydandr/13/0.

[2] Idem.

Critical design, then, offers a speculative yet material mode of thinking that operates within the world itself. For Dunne and Raby, it is not just a matter of thinking critically about design but *thinking through the design and making of things and processes.* Critical design offers a mode of concrete speculative thought that is post-ideational and post-logical, in that it manifests itself in the world through hypothetical but nonetheless real objects and scenarios. 'Speculating through design by presenting abstract issues in the form of hypothetical products enables us to explore ethical and social issues within the context of everyday life.'[3] Likewise, for StudioLab, designing and making constitute a mode of thinking in its own right, a mode of thinking and acting in the world that works with materials and ideas to engage the full spectrum of mind, body, and spirit. It involves the making of what we will call *thought-action figures.* One creatively thinks-acts in StudioLab's critical design pedagogy, whether it be through the design of objects or events or processes. Critical design via transmedia knowledge requires thinking-acting across different media, engaging different senses and different cognitive skills. As we will see, speculative objects, counterfactual statements, and imagined worlds are part of StudioLab's pedagogy, and all can move toward becoming real world, high res, and highly concrete through iterative processes of transmediation. Doodles become buildings, diagrams become books.

The extension of critical thinking into critical design takes many paths, as colleges explore ways for students to combine writing and media through design. The development of design as a critical discourse in the US can be seen in academic courses and programs in *critical design thinking*, including a graduate degree at Virginia Tech University and an undergraduate initiative at Smith College, a liberal arts college in Massachusetts. As the name suggests, critical design thinking merges critical thinking and design thinking:

> The Smith brand of design thinking envisions design in service of broader social issues of participation, intervention and leadership. Design thinking can be used to question gender, power and ability as dynamics that shape who gets to participate in creating the world we live in.[4]

[3] Idem.

[4] The Design Thinking Initiative, Smith College, retrieved May 15, 2016, http://smith.edu/design-thinking/.

StudioLab's critical design mixes critical thinking, design thinking, and tactical media, and likewise seeks to prioritize values of cultural efficacy in relation to organizational efficiency and technical effectiveness. Critical design thinking, in particular, offers students concrete methods for site-specific micro-transvaluations of value, and it is important to note that Smith College's inaugural projects include a campus-wide initiative to rethink the college's work and learning spaces. From StudioLab's perspective, democratizing digitality requires changing values in order to transform the spaces, media, curricula, and organization of learning and empower students to approach knowledge and power in both critical and creative ways.

Digital Storytelling and StoryCenter

In recent years, digital storytelling has emerged as a powerful form for expressing experiences and ideas through video technologies. Our second tutor site is thus StoryCenter (originally the Center for Digital Storytelling), a leader in developing and bringing this form to individuals, communities, and organizations.

> We create spaces for transforming lives and communities, through the acts of listening to and sharing stories. Since 1993, we have partnered with organizations around the world on projects in StoryWork, digital storytelling, and other forms of digital media production. Our selection of public workshops supports individuals in creating and sharing stories.[5]

The basic process involves developing and recording a well-crafted story based on personal experience, storyboarding a simple yet compelling visual track of photos and/or videos, and then editing the audio and visual together into a short, powerful video. Through its workshops, StoryCenter has helped democratization digitality by teaching 20,000 people digital storytelling skills. In the US, storytelling in general has blossomed into a major social phenomenon, with both artists and institutions turning to it as a way to use intimate experiences to reveal large, social relations, or to enhance public relations. Alongside StoryCenter, Brandon Stanton's *Humans of New York* and the projects of the nonprofit StoryCorps use

[5] "About Storycenter," https://www.storycenter.org/about/, accessed March 23, 2018.

personal stories to reveal aspects of the human condition at the level of city and nation, respectively.

On another level, organizations and businesses have developed practices of transmedia storytelling (stories told across a variety of media: film, print, action figures, etc.) and strategic storytelling (stories told as part of strategic communication). Significantly, StoryCenter has recently partnered with the National Humanities Center to help create Humanities Moments, digital stories revealing the impact that humanities have had on individual lives—and thus the importance of humanities within contemporary culture. In our own mix of expert and common discourses, StudioLab embraces digital storytelling as a central way of introducing *mythos* and *imagos* (story and images), into discourses dominated by *logos* and *eidos* (logic and ideas), or to put this in another register, mixing common experience and formal knowledge to produce a new mode of thought and action. Stories are only one way to organize or 'architect' experiences and knowledge, and video only one digital form, but digital storytelling demonstrates how experience and knowledge can move across innumerable media, fields, and institutions.

Within traditional genres such as academic books and presentations, scholars regularly use stories and other narrative forms, often without realizing it. Sometimes, an anecdote will open a presentation, intended as a way to connect with the audience and introduce the topic. More substantively, any logical or rhetorical appeal to history or historical evidence, whether indirect or direct, appeals to a narrative unfolding of time which may range from a detailed account of a specific event to a sequence of related events to an overarching grand narrative—such as the Enlightenment or Progress. But it is not just historians and humanists who tell stories and make arguments about and with them: we also find narrative structures in case studies, lab reports, and descriptions of complex social phenomena and natural processes—Revolution, for instance, and Evolution. First this, then this, then this.

In *Houston, We Have a Narrative: Why Science Needs Story*, marine biologist Randy Olson argues that most scientists are terrible storytellers, and many resist even considering themselves as storytellers. However, he finds narrative at work in one of the most widely used textual structures in knowledge production, IMRAD, the structure of Introduction, Method, Results, and Discussion used in medical articles and other scientific publications. This structure was invented in the 1920s and widely adopted in the 1940s, but most scientists do not know the formal name IMRAD, nor

recognize its three-part narrative structure, even though they use it routinely: beginning (I), middle (M&R), and end (D).[6] For Olson, scientists are simply poor storytellers, at a time when science needs story—and in our context, the liberal arts need digital storytelling.

For StudioLab, the most important insight here is that in addition to sharing personal experiences, stories can and do mix with arguments, and thus can also generate shared experiences of formal knowledge and conceptual understanding, even in the most traditional and rigorous of academic media, the scientific article. Moreover, stories can not only introduce arguments rhetorically and function as evidence, description, and overarching structure, *they also express the core activities of research and learning themselves*: discovery, method, interpretation, insight, realization, conceptualization, enlightenment, and so on. Descartes' *Discourse on Method*, after all, can be read as a *Bildungsroman* or coming-of-age story for both scientist and science itself. Kant makes this maturation the story of the Enlightenment. Significantly, Olson argues that the information explosion has led to a dramatic increase in publications *about* narrative, suggesting that storytelling offers a way to generate higher-level patterns of information.[7] From our perspective, the explosion of narrative research and the rise of science communication and strategic communication, as well as areas such as conceptual and data storytelling, all point to the emergence of digitality and its global mashup of orality and literacy, apparatuses of power and knowledge built on *mythos* and *logos*, story and logic. If we understand story and logic as two foundational modes of pattern-making that have guided human thought and action, the question arises: what new patterns emerge with the apparatus of digitality? Here critical design can help us think-act.

Improv Science and the Alda Center for Communicating Science

Our third tutor site directly addresses how scientists incorporate subjective, expressive, and even physical elements to communicate their specialized research with public audiences, policymakers, and the media. Focusing on the speaking body, the Alan Alda Center for Communicating

[6] Randy Olson, *Houston, We Have a Narrative: Why Science Needs Story* (Chicago: The University of Chicago Press, 2015), 6–8.

[7] Ibid.

Science at Stony Brook University teaches scientists and health professionals the basics of improvisation and other theatrical techniques. Named for actor Alan Alda, the 'Alda Center offers a range of instructional programs for science graduate students and scientists, including workshops, conferences, lectures, and coaching opportunities, as well as credit-bearing courses offered through the School of Journalism.'[8] Alda himself has helped develop the program whose 'goal of teaching scientists improv is not to turn them into actors, but to free them to talk about their work more spontaneously and directly, to pay dynamic attention to their listeners and to connect personally with their audience.'[9] Increasingly, scientists recognize the importance of nurturing and maintaining a positive relationship with both specialized and nonspecialized audiences, including policymakers and the general public, in part because their research largely depends upon grants from the National Science Foundation (NSF), the National Institutes for Health (NIH), and other funding sources. Indeed, NSF and NIH grant applications require researchers to describe the broader impact of their work, and while this component does not carry as much weight as the proposal's intellectual merit, the rise of community-based participatory research methods, on the one hand, and anti-science political forces, on the other, may cause both scientists and funding organizations to place more emphasis on the ways research affects local communities and society at large.

For StudioLab, the Alda Center demonstrates the power of bringing the performing arts studio-based practices to researchers working in a totally different environment, that of the science lab. Other hybrid forms of scientific knowledge include science rap and Dance Your PhD. As the name suggests, science rap translates scientific knowledge into rap music, with lyrics conveying specialized knowledge sung to hip-hop music. The form owes much to Tom McFadden, a science educator at the Nueva School in Hillsborough, California, who studied biology at Stanford and science communication at the University of Otago, New Zealand. Since 2011, McFadden's middle school students have created and published

[8] Alan Alda Center for Communicating Science, The Alda Center, accessed May 30, 2019, aldacenter.org.

[9] Ibid.

music videos through the Science Rap Academy on YouTube,[10] and under the rubric of Science with Tom, he offers workshops teaching faculty to compose science rap in little under an hour.[11] Lest one thinks rap is only for school kids, A. D. Carson's 2017 doctoral dissertation at the University of Clemson took the form of a full-length rap album, *Owning My Masters: The Rhetorics of Rhymes & Revolutions*, which both studies and embodies the question of authentic black voices in academic sites—such as Clemson, a campus whose history is entwined with slavery. Revealing the troubling genealogies of 'mastery' that connect colonialism and formal education, Carson's performative dissertation is both site specific and virtual, grounded and mobile. Carson produced his critical race rap album for his degree in Clemson's innovative program in Rhetorics, Communication, and Information Design, and it is available online along with lyrics, texts, and videos.[12]

Like the performances of improv science and science rap, Dance Your PhD does precisely what it says, but on the sustainable scale of an annual international competition, sponsored by *Science Magazine* and the American Association for the Advancement of Science. Science journalist John Bohannon started the Dance Your PhD contest in 2008, and now each year doctoral students in four areas, Physics, Chemistry, Biology, and the Social Sciences, from around the world translate their research into dance.[13] Modern experimental dance, in particular, proves especially apt at transmediating advanced research into topics such as complex natural dynamics and biological processes, abstract mathematical structures, and human creativity and interaction by choreographing them into dance videos ranging from two to ten minutes.[14] This mixing of studio and lab

[10] Tom McFadden, "Science Rap Academy," *YouTube* video playlist, last updated July 26, 2018, accessed January 27, 2019, https://www.youtube.com/playlist?list=PLvgILFwoRX2min-PEDNXfk25KULkKfy7S&app=desktop.

[11] Tom McFadden, Science with Tom website, accessed January 27, 2019, https://www.sciencewithtom.com/.

[12] A. D. Carson, "Owning My Masters: The Rhetorics of Rhymes & Revolutions," accessed January 27, 2019, https://phd.aydeethegreat.com/.

[13] Wikipedia contributors, "Dance Your PhD," *Wikipedia, The Free Encyclopedia*, last modified December 3, 2018. https://en.wikipedia.org/wiki/Dance_Your_PhD.

[14] Jason Daley, "Watch the Winners of the 2017 Dance Your Ph.D. Competition," *Smithsonian.com*, November 3, 2017, accessed January 27, 2019. https://www.smithsonianmag.com/smart-news/watch-winners-2017-dance-your-phd-competition-180967068.

activities lies at the heart of StudioLab's pedagogy, informing not only the types of projects and media that students make but as we will see, the very space in which this making unfolds.

The hybrid genres of digital storytelling, improv science, science rap, and Dance Your PhD, all demonstrate that practices long excluded from knowledge production—theater, music, song, and dance—are reemerging inside the academy itself, far from their specialized fields and formal institutions. Poetry, music, song, and dance are practices Plato excluded from the Republic due to their enchanting mimetic effects on audiences, and their reemergence in science gives us insight into not only the hybrid forms that knowledge takes in digitality but also the transformations at stake in the thinking body itself.

Smart Media and DesignLab

A final tutor site here is DesignLab, a media design consultancy at the University of Wisconsin–Madison. DesignLab functions like a writing center for new media projects generated by student courses and research, as well as student organizations and other extra-curricular activities. It offers no classes of its own but provides one-on-one and group consultations, serving hundreds of students each term. A key contribution of DesignLab to critical design has been its formulation and description of *smart media* or emerging scholarly genres that supplement the traditional print genres of scholarly books and articles.[15] Smart media are transmedia knowledge and include multimedia presentation forms such as TED talks, PechaKucha, and PowerPoint presentations; video forms such as video essays and vlogs; digital images such as infographics, posters, and illustrations; and many other media genres already being used by scholars worldwide. Smart media are a primary form that critical design takes in StudioLab.

Yet resistance to such transmedia knowledge remains strong in Plato's Fight Club. A report of the 2010 Scholarly Communication Institute, *Emerging Genres in Scholarly Communication*, describes the alienating

[15] See Jon McKenzie, "Smart Media at the University of Wisconsin-Madison," (*Enculturation: A Journal of Rhetoric, Writing and Culture 15* http://www.enculturation.net/smart-media), and Jon McKenzie, "DesignLab & The Democratization of Digitally," TEDx University of Wisconsin, https://www.youtube.com/watch?v=YmYgTy2VkBU.

obstacles that come between humanities faculty and students when faced with digital media:

> The reliance of faculty on tenure and review models tied to endangered print genres leads to the disregard of innovation and new methodologies. And mobile, digitally fluent students entering undergraduate and graduate schools are at risk of alienation from the historic core of humanistic inquiry, constrained by outmoded regimes of creation and access.[16]

These same print genres constrain scientists and social scientists. Powerful disciplinary and infrastructural forces thus limit the democratization of digitality and the emergence of transmedia knowledge, forces closely tied to the logocentric origins of the modern university and its reluctance to imagine new institutional values. Beginning in the 1960s with mainframe computers and ARPANET (the Advanced Research Project Agency Network), the digital infrastructure has been installed in higher education for almost half a century, but while universities helped create today's Internet they struggle to compete with Apple, Google, and other corporations for students' time and attention. Transmedia knowledge comprises the means for addressing this lag between infrastructure (databases, networks, computers, and search engines) and superstructure (pedagogy, curriculum, research methods, tenure, and promotion standards) that helps structure the crisis of the liberal arts. Transmedia knowledge blurs Plato's distinctions of *logos* and *imagos*, *eidos* and *imagos*, *episteme* and *doxa*, and facilitates the emergence of a new, post-ideational mode of thinking and acting. *It is within a new makerspace of thought and action that new values must be forged, at the border of expert and common knowledge.*

DesignLab obviously did not invent the emerging scholarly genres but has carefully gathered them together and crafted 'smart media kits' that provide descriptions, examples, and tips and resources for creating them.[17] Within our StudioLab pedagogy, students regularly research a topic and over the course of a semester translate their knowledge into a suite of transmedia projects, for instance, a graphic essay, a multimedia presentation, a video essay, and a website that contextualizes and contains these

[16] Scholarly Communications Institute, http://uvasci.org/institutes-2003-2011/SCI-8-Emerging-Genres.pdf.

[17] University of Wisconsin-Madison, Smart Media, accessed July 7, 2016, designlab.wisc.edu/smart-media.

media forms. Similarly, workshop participants translate their own work into one or two transmedia genres. In both cases, the knowledge or content is actively shaped for different audiences. What's important to recognize here: StudioLab's transmedia knowledge for liberal arts entails neither a broadside critique of expert knowledge nor its noncritical dissemination to others, but rather, its strategic and tactical reinscription into transmedia knowledge attuned to different stakeholders—peers, community members, decision-makers, the general public—stakeholders essential to the accompanying transvaluation of values at the levels of institution and infrastructure. For this transvaluation to unfold, both students and faculty must become makers, and transmedia knowledge must become part—indeed the means—of campus and professional discussions about designing curricula and tenure standards that meet the challenges facing the liberal arts.

Transmedia Knowledge and the Image of Thought

These tutor sites enable us to elaborate our definition of StudioLab's approach to critical design and to formalize the type of knowledge it produces. Students become makers by producing *transmedia knowledge*, knowledge that moves across different media in order to engage different audiences, rather than remaining limited to academic writing targeting only experts. Transmedia knowledge also mixes *episteme* and *doxa*, expert and common knowledge, by combining ideas and images, as well as logic and narrative, for a wide variety of effects: persuasive, communicative, educational, aesthetic, experimental, and so on. This knowledge is post-ideational as its thought extends beyond the production and analysis of ideas and logical arguments to also include the making of moods, images, stories, events, objects, environments. Emerging transmedia forms tend to be hybrid and multimedia—digital storytelling, science rap, info comics, Dance Your PhD, lecture performance—yet *all media become transmedia as thinking moves across media*. Thus, ideas and academic writing become transmedia knowledge in StudioLab—or rather their inherent transmediality comes to the fore: the alphabet, again, visualizes sound and enables the vocalization of script.

Alongside its new forms, the organization and dynamics of knowledge alter radically, at the root, with transmediation. The tree of knowledge, whose branching structure captures Aristotle's logical categories and the

step-by-step movement of thought up and down as induction and deduction, becomes overgrown with the grasses and tubers described by Deleuze and Guattari, who contrast tree and rhizome as two images of thought.[18] The tree stands with its unity, verticality, and linear development; the rhizome spreads with its multiplicity, horizontality, and nonlinear breaks. Such rhizomatic organization and dynamics extend out into the world. Social scientists distinguish between hierarchical and networked organizations, making similar distinctions between their structure and movement of resources, information, and decision-making. In the natural world, geneticists have recently discovered that genetic materials not only flow vertically within a species from one generation to the next but also move transversally across different species through horizontal genetic transfer, a process that seems ubiquitous. What's important here is not to oppose these images of thought but to juxtapose and map their convergences and divergences, for trees become grasses and vice versa. Step-by-step thinking gives way to abductive leaps and conductive flashes, which open new spaces for other steps and leaps.

Transmedia knowledge entails new forms and arrangements of knowledge, and it also composes a new body for thought and action, a body produced in a variety of ways. Transmedia knowledge emerges through the combination of learning activities that involve different body movements and spatial configurations, those found in seminar, studio, lab, and field. Because transmedia knowledge foregrounds making, it consists of embodied know-how as well as intellectual know-what, bringing practice and theory into a new alignment. Critical thinking becomes critical design via transmediation. Moreover, as it multiplies media beyond text, to image, sound, objects, environments, and so on, transmedia knowledge engages many more senses and thus generates more sensations in its creation and reception than does ideational knowledge alone. And through the plasticity of new neural pathways, arborescent thought becomes rhizomatic. In these interconnected ways, thinking becomes post-ideational: if Rodin's sculpture *The Thinker* captures ideation in a seated, inwardly contemplative pose, in StudioLab the thinker becomes outwardly active and performs: she stands, plays music, sings, dances, makes media. Becoming maker, the thinker becomes thought-action figure.

[18] Gilles Deleuze and Felix Guattari, *A Thousand Plateaus* (Minneapolis: University of Minnesota Press, 1987), 1–25.

Thought-Action Figures and Media Cascades

With transmedia knowledge, a new image of thought emerges: thought-action figures, which are to digitality what ideas are to literacy, basic forms of thought and existence (recall that Plato interpreted Being as *eidos*). Thought-action figures are not limited to human figures: animals, plants, machines, systems, processes, materialities, symbols, and other abstract entities—all become thought-action figures via transmediation, movement through mediums deemed material, spiritual, cultural, and so on, within different ontologies, essentially different worlds. Design thinking researchers refer to 'media-cascades' as 'the sequence of representations through which projects develop and unfold in different media during the course of a development cycle,'[19] drawing on Bruno Latour's research on thinking with eyes and hands and the cascades of inscriptions, columns, files, and screens that comprise the production of knowledge.[20] Thought-action figures emerge not only in individual media but in their cascading movement across diverse media, their sometimes smooth, sometimes flickering, sometimes jagged transmediation of thought and action.

Moreover, in becoming maker, both thinking and thinker, action and actor enter into the cascade of transmediation, revealing the mind-body as a medium for rhythms, sounds, images, representations, technical routines, economic flows, moral systems, and so on. Thought-action figures operate both cognitively and affectively, working on the minds and bodies of makers as well as audiences: indeed, becoming maker entails reshaping one's thought and action, reinscribing the ideation and logic of Western thinking within a broader mediascape of stories and poetic structures, pictures and diagrams, melodies and refrains, rhythms and patterns, spaces and voids.

Media theorist D. N. Rodowick argues that new media and twentieth-century thinkers such as Lyotard, Deleuze, and Derrida have helped introduce the figural as a new historical mode of thinking that displaces the opposition of word and image within an emerging formation of power and knowledge.

[19] Jonathan Edelman and Rebecca Currano, "Re-representation: Affordances of Shared Models in Team-Based Design," in *Design Thinking: Understand – Improve – Apply, 61 Understanding Innovation*, ed. Hasso Plattner, Christoph Meinel, and Larry Leifer (Berlin & Heidelberg: Springer-Verlag, 2011), 61–79.

[20] Bruno Latour, "Visualisation and Cognition: Drawing Things Together," (*Knowledge and Society Studies in the Sociology of Culture Past and Present*, ed. H. Kuklick, Jai Press, 6, 1–40).

> What is ultimately at stake is how the possibilities of knowledge are defined in relation to power in given historical epochs. These strata, or more precisely, their particular combination and distribution of visible and expressible, constitute the positive forms of knowledge as historical a prioris. There are only 'practices' of knowledge and strategies of power.[21]

For Rodowick, the figural emerges as a new arrangement of power-knowledge with societies of control (governed by performativity rather than disciplinarity) and digital media, and notably, he cites cyberpunk and guerrilla media as 'resisting, redesigning, and critiquing digital culture.'[22] For us, thought-action figures, like the ideas and writing of literacy, constitute *pharmakon*, undecidables whose effects of power and resistance turn around one another. Figures can be appropriated and expropriated—used and abused—by other forces as they cascade through different power setups. Exemplars of such figures from the sciences include Einstein's $e=mc^2$ equation, Watson and Crick's double helix DNA structure, and Mandelbrot's geometric fractals; from the human sciences, Nietzsche's eternal return, Wittgenstein's rabbit-duck, and Haraway's cyborg; from the history of activism, Gandhi's *khadi* clothing, ACT-UP's pink triangle, and the Guerrilla Girls' gorilla masks; and from corporate marketing, the Nike swoosh, McDonald's golden arches, and the Apple logo. Dance Your PhD and science rap are transmedia genres packed with thought-action figures. Overloaded with conceptual content and laden with emotional charge, such figures take shape in different contexts and their effects range from immediate 'shocks' to sharp or vaguely defined personae to silently evolving backgrounds and atmospheres.

In making thought-action figures and reinscribing ideas across media, StudioLab students approach transmedia knowledge not just tactically but also *tactilely*, actively handling and manipulating concepts, images, sounds, and other materials in order to explore their affordances and constraints, experimenting with the different functions that figures can support and the various effects they can produce across different media genres and contexts. What happens when an analytical paper is translated into a proposal for a local community installation, or when that proposal then takes the form of a multimedia presentation to a group of policymakers, or when the project subsequently becomes an actual installation and public event? The thought-action figures bend and stretch as they take different medial forms and affect different audiences in unforeseen ways.

[21] D. N. Rodowick, *Reading the Figural, or, Philosophy after New Media* (Durham, NC: Duke University Press, 2001), 54.

[22] Ibid., 234.

McLuhan famously wrote 'the medium is the massage' (in addition to it being the message), by which he meant that media work over the body's sensorium, just as a masseuse works over its muscles.[23] The 'working over' effected by transmedia knowledge thus extends throughout the traditional communication sequence of sender-message-receiver, rerendering it as a transversally haptic space of thought-action figuration. If we also note that dancer Yvonne Rainer once declared 'the mind is a muscle,'[24] we can say that transmedia knowledge exercises different cognitive and sensory muscles to elicit different thought-actions as students move through the learning activities of seminar, studio, and lab.

An essential element of StudioLab's critical design approach to democratizing digitality is obviously digital media itself: democratizing its making. Thought-action figures take shape through the making and sharing of transmedia knowledge. Everyday media forms such as public presentations, posters, and YouTube videos carry powerful communicative and affective force, while search engines, wikis, and other tools have transformed knowledge discovery and empowered communities to connect locally and globally. At their very best, even the most derided of media forms—for example, PowerPoint—can produce intelligent, sensitive effects for audiences intimate and massive: one thinks of Al Gore's 2006 *An Inconvenient Truth*, effectively an Academy Award–winning PowerPoint presentation, or Chai Jing's 2015 *Under the Dome*, a powerful documentary on pollution in China downloaded by hundreds of millions of viewers before being censored by the Chinese government. StudioLab's critical design approach uses transmedia knowledge to forge connections across spaces, disciplines, and communities. Yet while TED talks, digital storytelling, and similar media forms have become ubiquitous in the early twenty-first century, what is lacking has been a language for analyzing them and a practice for creating them in scalable, sustainable ways. Along with transmedia knowledge forms, our critical design frames play a crucial role here.

Design Frame 1: CAT

What does transmedia knowledge look, sound, and feel like? How can one describe it? And how does one make and evaluate the movement of thought-action across different media genres? StudioLab uses three design

[23] Marshall McLuhan and Quentin Fiore, *The Medium is the Massage* (New York: Bantam Books, 1967), 26.

[24] See Catherine Wood, *Yvonne Rainer: The Mind Is a Muscle* (London: Afterall, 2007).

frames to help students generate projects and enable both students and faculty to evaluate them. We introduce the first design frame here, Conceptual/Aesthetic/Technical, which we abbreviate as CAT. CAT combines three aspects or dimensions of transmedia knowledge production:

- *Conceptual*: the guiding argumentative, expressive, rhetorical, or experimental content of the media
- *Aesthetic*: the visual, aural, textual, and interactive qualities of media embodying this content
- *Technical*: the selection, combination, and use of tools and techniques to produce the media

The CAT frame can be used to describe, analyze, and generate transmedia knowledge or any media work for that matter. CAT enables us to describe both individual media genres and, more importantly, the ways in which movement across media forms affects conceptual, aesthetic, and technical dimensions. As most writers, engineers, designers, and artists know, in practice the distinctions between conceptual, aesthetic, and technical dimensions can be difficult to unravel, especially when working in a single medium. However, with transmediation, these dimensions emerge and become malleable. Often, the conceptual content remains stable, the aesthetic affect can shift dramatically depending on audience, and the technical means change significantly.

We can describe the traditional academic essay using the CAT frame. The essay's C is its argument and evidence, its *logos*, and its rhetorical appeal to *ethos* and *pathos*. Disciplinary training and research supply the conceptual content, with arguments and evidence found and produced with recognized methods and protocols. The academic essay's A is its writing style, which typically strives for clarity and cohesion, qualities attained by a contextualizing introduction, an orderly sense of transition and building between paragraphs and sections, and a conclusion that gathers the main arguments and closes with implications and/or further questions. Aesthetics here also includes something so ingrained that we barely notice it: the text's layout and physical support, that is, 8.5 × 11-inch white paper, black 12-point font, and 1-inch margins. The essay's T is often Microsoft Word or similar word-processing software—whose default settings produce this layout—plus the computer hardware, and any other technologies used in the essay's composition: books, search engines, pencil and paper, camera, and so on. First-year writing courses effectively

teach students this CAT framework for critical thinking, instructing them to present arguments and evidence in clear prose. Significantly, most colleges assume students already know how to use computers, know Microsoft Word, and provide access to computer labs, if needed.

Redesigning Silence

StudioLab challenges students to transmediate knowledge by learning new aesthetic and technical skills and developing new muscles for conceptual development, as different transmedia genres entail different configurations of CAT. To see and hear CAT in thought-action across media, we can explore another set of tutor materials: a suite of transmedia knowledge produced by Steel Wagstaff, a graduate English student at the University of Wisconsin–Madison. In a course on Future Learning, students were asked to transmediate a research paper that they had written in one of their other courses (again, StudioLab can engage potentially any subject matter). While other students chose papers on such topics as animal rights, science communication, and feminist film, Wagstaff selected a research paper on American composer and writer John Cage titled *Essays into Silence, Noise, and John Cage*.[25] The C or conceptual content of the paper consists of the argument and textual evidence. In terms of aesthetics, Wagstaff had produced a traditionally formatted seminar paper divided into three topical sections although he had already generated a variation inspired by Cage: he called the sections 'movements' and introduced noise into the body of the text by gradually writing longer and longer footnotes. In short, Wagstaff had used Cage's work as tutor material, subtly experimenting with the academic essay's form. Technically, he produced the text using a common word-processing program.

Assigned a StudioLab project to transmediate his seminar paper into a *graphic essay*, Wagstaff learned Photoshop and InDesign in our lab workshops and then spent studio time reconfiguring his seminar paper by breaking up the text into different page layouts, exploring different fonts, sizes, and color, and most importantly, adding a visual track of photographs, diagrams, and other images, both as figures and in the background. The result was a graphic essay, also divided into three movements, produced in the style of a zine or a homemade, small circulation magazine (Fig. 2.2).

[25] Steel Wagstaff, unpublished paper. He describes the project in "The {Silence} Project: Some Adventures in Remediation," *Enculturation* 15. Published: September 27, 2012. Accessed July 9, 2018. http://www.enculturation.net/essays-into-silence-noise-and-john-cage.

Fig. 2.2 Selections from seminar paper, graphic essay, and video, "The{Silence} Project: Some Adventures in Remediation." (Steel Wagstaff 2012)

The Conceptual-Aesthetic-Technical configuration of Wagstaff's graphic essay differs dramatically from that of his seminar paper. While the conceptual content remains largely unchanged, it has been reshaped and expanded by the aesthetic potential of the zine and the technical affordances of Photoshop and InDesign. Previously footnoted stories and facts enter into the main body of the zine, appearing in a diverse array of fonts and colors. The visual images open up an entirely new evidence track composed of photographs, diagrams, and graphic design elements, while the magazine layout and use of typography enable a fragmented and nonlinear reading experience inspired by Cage's use of chance, elements of everyday life, and other Fluxus art techniques. Using Cage's work as tutor material and emulating the Fluxus breakdown of the art/life divide, Wagstaff also mixed images of Cage with elements of contemporary visual culture and his own life. Photoshop and InDesign enabled him to use montage and the overlaying of image and text, basic aesthetic techniques of modernist art and design that contribute to the conceptual remake of his seminar paper. Anticipating our discussion of the second UX design frame in the next chapter, the different CATs have different targets and intended effects: while the seminar paper targets a highly specialized audience and produces a detached reading experience, the graphic essay genre of the zine entails a very different audience and reader experience: readers of noncommercial magazines passionately, even fanatically, devoted to counter-cultural topics ('zine' derives from fanzines).

A second transmediation of Wagstaff's essay, this time into a video essay, entails yet another CAT configuration and another set of users and affects. The conceptual component again follows the seminar paper closely, with the video divided into three topical movements. Aesthetically, the video essay's image track draws heavily on images from the graphic essay, while adding many other found images. Movement now enters literally through moving images: Wagstaff used pans, zooms, and animation features found in another technical tool, that of Apple's iMovie software. But the most noticeable and powerful conceptual, aesthetic, and technical difference between the video and both the paper and zine lies in the addition of yet another evidence track; the audio track, thus directly introducing into the CAT configuration the primary experiences whose distinctions Cage experimented with throughout his art/life: those of music, sound, noise, and silence. Not only do we hear Cage's voice, we hear an actual recording of *4′33″*, his most famous and controversial composition, performed and recorded by the BBC Symphony Orchestra. The silence, the

noise, the music, is the sound of the audience breathing, coughing, and squirming in their seats. In addition, Steel creates an entire soundtrack composed of contemporary music, voices, and found sounds. He uses the technical affordances of the video-editing software to overlay image, sound, and text to make his conceptual argument 'more sound' by emulating and transforming the aesthetic (or anti-aesthetic) dimension of Cage's Fluxus life/work. The video genre opens up a wider set of audiences and experiences, as Wagstaff's video could be shown in public museums and on television, or posted online. Through this small suite of transmedia genres, we see the power of maker culture in transmedia knowledge production and the flexibility of the CAT design frame. Again, critical design and media do not replace critical thinking and writing: *they translate and mix them with other media forms in order to make them more effective and accessible to different audiences.* Transmedia knowledge enables new types of argumentation not limited to induction and deduction, but also including abduction (conceptual leaps within a domain) and conduction (pattern recognition across domains). It also provides a wider and richer combination of evidence tracks: not only textual, but also visual, audio, and interactive. At the same time, alongside expert knowledge, transmedia knowledge introduces *doxa* or common knowledge: images, sounds, and stories from popular culture, counterculture, and personal experience. This mix of expert and common knowledge within different media genres enables transmedia knowledge to engage a wide range of audiences, from experts to nonspecialists, from peers to community members to policymakers. Such transmedia knowledge production can generate a wide array of experiences and rhetorical effects: from detached and serious to dramatic and moving to humorous and light, depending on the target audience, intended effect, and CAT configuration.

Teaching Critical Design Frames

How to teach and learn StudioLab's critical design frames? StudioLab is project-based pedagogy: students learn the CAT, UX, and Design Thinking frames by designing and making transmedia knowledge to engage different audiences in different ways. The thought-action figures of projects appear differently through the three design frames, and students can learn CAT, UX, and DT separately or in different sequences. We often start with the CAT frame and do so here because its formal and functional simplicity opens up the making process to those who crave

creative confidence but lack creative experience. CAT enables one to start making quickly and rigorously. The frame's simplicity is deceptive, as it accesses and connects conceptual, aesthetic, and technical dimensions of mind-boggling complexity while simultaneously enabling students to begin navigating them in exciting ways that they can share and discuss.

From a faculty's perspective, CAT's complex simplicity also makes it extremely versatile in the classroom. Here are some ways to begin teaching with the first design frame, ways that can also be used with UX and DT.

1. *Assign a transmedia project* that involves creating at least two media forms, such as a paper and a video or a presentation and a website, forms that connects specific content with specific audiences. While this could mean adding a new media form, many if not all disciplines already regularly assign transmedia projects, such as class presentations and poster projects, aimed at disciplinary audiences, even if little or no instruction in their aesthetic and technical dimensions occurs. Thus, one can add new media genres or build on existing assignments by formalizing and diversifying their target audiences, production, and evaluation. Explicitly state that you will evaluate the project using the CAT design frame, even if you don't formally teach it.
2. *Use CAT to plan class activities*: even without teaching the frame formally, plan to spend time *discussing* the conceptual components of the project; then spend time *looking, listening, and/or interacting* with examples, using them as tutor materials to learn their aesthetic dimension, how the content is shaped for the given media; also set aside for technical *skill-building*, whether it be software training or instruction in presentation or creating installations. Then provide time across several classes for students to actively integrate the conceptual, aesthetic, and technical components.
3. *Teach the frame both abstractly and concretely* by defining its three components, then demonstrating it by analyzing the conceptual, aesthetic, and technical aspects of different works with the same content—such as novels and film adaptations, or science textbooks and museums—and then asking students to do CAT analyses of works they select on their own. Like any analytic frame, students learn best by applying CAT repeatedly.
4. *Then ask students to plan their projects* by explicitly outlining the CAT configurations of their deliverables, just as they would plan and

outline a paper, an experiment, or a research project. This shift from analysis to synthesis defines critical media design: critical analysis in necessary but insufficient: critico-creative making is essential. Given the different transmedia genres, these plans could take the form of outlines, storyboards, flowcharts, prototypes, and production schedules. Have them review their plans in groups and with you.

5. *Ask students to make* transmedia using these CAT plans as blueprints for transmediating knowledge across media forms. Have this media production be both homework and classwork. As noted above, set aside several classes for making, and have students discuss their work in progress and provide feedback to them using CAT. Also discuss their progress vis-à-vis their plans, adjusting the latter if necessary.
6. *Ask students to present their transmedia knowledge* before the class and require students to role-play as a target audience and discuss or 'crit' the work using the CAT frame: What is happening conceptually? Is the aesthetic dimension appropriate to the target audience(s)? What is the work's technical strengths and weaknesses?
7. *Explicitly evaluate the transmedia knowledge projects using the CAT frame*: use CAT as a rubric to read across the different forms, evaluating the conceptual, aesthetic, and technical strengths and weaknesses of each work. Alternatively, focus on each work separately and break down its CAT.

In practice, the simplicity of CAT quickly opens up to the complexity of its components. The conceptual dimension is constituted by the diversity and complexity of disciplinary knowledge itself, with its hundreds of specialized fields of objects, their established and emerging methodologies and infrastructures, and their various schools and genealogies. Typically, formal, conceptual knowledge is primarily the concern of researchers, instructors, and advanced students. The aesthetic dimension can be just as specialized and conceptual, whether components come from film, graphic design, painting, or other fields of visual culture; from musicology, sound design, and sound studies; from poetry and narrative; from theatre and performance art; from game design and virtual worlds. And technical languages include the burgeoning number of software, programming languages, social media platforms, and SDKs, as well as the technical dimension of computers, handheld devices, servers, and networks.

Such complexity may appear as a major challenge to the democratization of digitality. Yet this challenge is precisely that facing the liberal arts and

higher education in the contemporary world. Specialized knowledge has always floated in a sea of common knowledge, and engagements between *episteme* and *doxa* are many. Community-based research, teaching, and service have sought to connect epistemic knowledge with local communities. Similarly, scholars and administrators have a long history of interacting with policymakers, public funding agencies, and private foundations; while popular science, public history, and public humanities have engaged the general public. In terms of aesthetics, information designer David McCandless suggests that exposure to popular culture gives us all 'a kind of dormant design literacy.' We exercise aesthetic judgment and creativity every day when we express ourselves verbally, when we make choices about food, gifts, and entertainment. Each morning we dress ourselves and go out without appearing as clowns in public. We likewise interact with interfaces and navigate digital spaces using devices that range from consumer to prosumer to professional grade. What we lack are common frameworks for bridging our technical skills, dormant design aesthetics, and formal conceptual languages. CAT provides a bridge for doing so, and at one level, StudioLab seeks to create educational contexts and opportunities for students to connect their academic learning, their everyday sense of style, and the media tools whose icons sit largely untouched on their laptops and iPhones. That's how simple becoming maker can be taught: assign transmedia projects, help students design them, and support their making.

Sleepy CATs in Disciplinary Homes: Why, What, and How

Responding to the crisis of the liberal arts entails redesigning the experience of specialized knowledge for diverse audiences. The CAT design frame helps to enable this redesign: indeed, CAT itself constitutes an animated thought-action figure. We can understand this animation by starting with specialized training. Given its transdisciplinary and cross-campus components, the dimensions of conceptual, aesthetic, and technical appeal and appear differently to faculty and students according to their respective training in seminars, studios, and labs. *Yet all scholars have their own CATs which rule their disciplinary homes*—that is, disciplinary training involves a set of conceptual systems and methods, an aesthetic of clarity and coherence, and technical tools and techniques for research, writing, and presentation. One might ask whether we teach our CATs or our CATs teach us. In terms of media design, these CATs perform well enough when writing

peer-reviewed articles or class papers or, similarly, delivering conference or class presentations. However, 'well enough' varies from brilliant to engaging to so-so to boring across all fields, and many faculties readily admit that reading student papers and listening to peers' conference presentations can sometimes be, well, uninspiring experiences. And the effect on nonspecialists can be much more telling, ranging from incomprehension, frustration, and anger to disbelief and even pity. A thought-action figure emerges: that of the isolated ivory tower.

A specialized knowledge's dominant CAT configurations, its longstanding fix of conceptual, aesthetic, and technical components, can easily be stirred without bringing down the academy, yet for disciplinary reasons we prefer to let sleepy CATs lie rather than wake them and ourselves up to other shared experiences of knowledge. To stir sleepy CATs, StudioLab focuses much of its attention on the frame's aesthetic dimension. As we saw with Wagstaff's *Essays into Silence, Noise, and John Cage*, the conceptual dimension of transmedia knowledge often remains stable in transmediation, and while the technical tools shift, the most profound transformations can occur in the aesthetic dimension. In this context, *aesthetics entails massaging, shaping, and sometimes generating material (whether it be textual, visual, aural, or interactive) appropriate to the technical affordances of a given transmedia genre, as well as the expectations and experience base of target audiences.* When transmediating a paper into conference presentation, images are key; when making a podcast for a general audience, environmental audio can create an immersive atmosphere; when creating an installation for a community group, images, objects, and interactive elements can produce a multisensory environment. And at each stage, the look and feel, the rhythms, colors, and overall style may change. Such aesthetic choices enable ideas to morph through the medium's technical affordances and create a richer conceptual experience for the audience, whether specialized or nonspecialized. This morphing animates ideas into thought-action figures capable of moving audiences' minds and bodies.

Yet it is not a matter of simply adding new aesthetic and technical components, for the resulting transmedia knowledge also needs a shape, rhythm, or movement—that is, a well-crafted thought-action figure—that resonates with oneself and others, especially nonspecialists whose expectations and senses have not been trained by specialized CATs. Engaging with other audiences, the conceptual component may be recast to reveal contexts, connections, and even uses overlooked or unforeseen by the maker. Passing through academic paper, zine, and audio-video, silence

itself becomes a thought-action figure, something composable and decomposable—which is precisely Cage's revelation and art/life method. Such discovery lies at the heart of human-centered design; for resonance works two ways, and the aesthetic and technical components can help audiences and makers tune each other in through the conceptual components. Thus, it is not a question of dumbing down conceptual knowledge but of building shared experiences that bridge *episteme* and *doxa*, expert and common knowledge. Makers and users learn from one another, and there are innumerable ways to do this.

We can visualize one way to craft resonant thought-action figures by turning to Lee LeFever's *The Art of Explanation*,[26] which uses a spectrum to diagram the distance separating Geeks and non-Geeks, in our terms, those with specialized, epistemic knowledge and those with common knowledge or *doxa* (Fig. 2.3). We find such distances between Town and Gown, city streets and conference rooms, policymakers and experts. LeFever argues that overcoming this distance depends on recognizing the difference between Why and How. Highly specialized discussions, such as those in colleges and academic conferences, tend to focus primarily on the How of argumentation, methodology, and specialized discourse, whereas the art of explanation requires also providing the Why, the discussion's broader significance, context, and stakes. For specialists, the Why is largely assumed and thus implicit—or even beyond question: 'of course, biology matters,' 'of course, we must study Shakespeare,' 'of course, history is

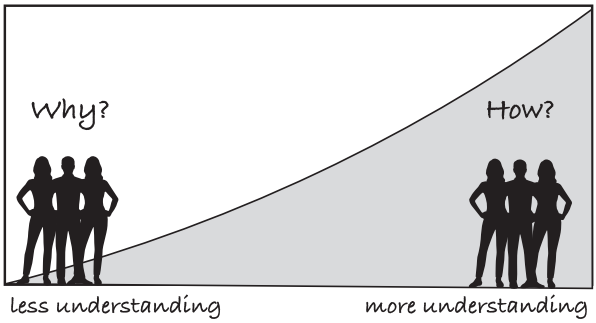

Fig. 2.3 Diagram based on the *Art of Explanation* by Lee LeFever (2012)

[26] Lee LeFever, *The Art of Explanation* (Hoboken, NJ: Wiley, 2012).

important!' The very existence of colleges and conferences embodies the legitimating context, and for many specialists, only children or philistines would ask Why? 'Can't they understand that the stakes are knowledge, culture, even civilization itself?' But for nonspecialists, the context and stakes are not self-evident and must be explained: the Why is lacking. Moreover, different specialists and even subspecialists in adjacent fields require the Why.

The solution offered by LeFever to bridge the gap between more and less understanding: Geeks must move along the spectrum toward non-Geeks and begin with the Why. Make the context and stakes clear from the start. LeFever then suggests telling a story (*mythos*) that guides attention from the contextual establishing shot toward the 'What' or main argument (*logos*). One then connects the story to the conceptual argument by interpreting the story as an illustration, case, or allegory of the What. Only after contextualizing, narrativizing, and connecting the Why to the What does one begin describing the How. For instance, in Plato's *Phaedrus*, Socrates begins by taking the young sophist outside the city walls of Athens. There, he tells Phaedrus the myth of Egyptian King Cadmus, who rejected the god Thoth's invention of writing for being detrimental to memory and thought. Connecting the myth to his argument, Socrates interprets the story as showing the superiority of *logos* over *graphe*, before describing the technique—the How—of dialectical reasoning.

Focusing on the Why of specialized knowledge can help recast the conceptual component, attuning it to both maker and audience. But transmedia knowledge, like traditional knowledge, does more than just explain. Beyond explanation, LeFever's Why-What-How distinctions can inform other processes, such as advocacy, decision-making, design, and problem-solving. Moreover, we can use it with respect to different audiences, as different stakeholders bring different contexts and perspectives—different Whys. And if we expand How to include not just internal details and processes but also the different ways various stakeholders can augment the What (e.g., how they can contribute to collaboration, implementation, publicity, funding, policy), we realize there may be different Hows as well as different Whys. In short, transmedia knowledge can help reveal different contexts and applications, different values and potentialities, all of which can help makers approach the What—the conceptual component of their transmedia knowledge—in more open and refined ways. This revelatory opening and refinement is the very opposite of 'dumbing down' specialized knowledge, and again it forms the heart of human-centered design, the place where *episteme* and *doxa* shape one another.

The Why-What-How structure can help faculty and students stir up sleepy ivy-towered CATs in order to craft thought-action figures that resonate with different audiences and stakeholders. In terms of transmedia knowledge production, Why-What-How can inform the composition of arguments in papers and presentations, narratives in digital stories and info comics, the visual layout of posters and installations, and even three lines of an elevator pitch. Thought-action figures, though captured by individual media forms, emerge precisely by passing through different iterations, jumping, shifting, and becoming animated in different ways as they appear within different media and contexts. This nonlinear transmediation is what make figures dynamic multiplicities rather than static units of ideation (though ideas are themselves never fixed in writing or thought—thus the history of philosophical thinking). Though only one way to choreograph experiences of transmedia knowledge, the steps of Why-What-How can help guide and shape the movement of thought-action figures both within and across different media forms.

Sparklines and the State of Bliss

Becoming maker via transmedia knowledge production has no one true method but follows or pathbreaks its way by any means necessary. Methods bring objects step by step before subjects as clear and distinct ideas. But as Heidegger contends in *The Age of the World Picture*, modern scientific explanation proceeds by mapping the unknown into the known. StudioLab's critical design process, however, involves using CAT and transmedia knowledge to remix *episteme* and *doxa* in order to open up the unknown within the known, so as to question it, critique it, defamiliarize it, recontextualize it, and/or create with it. When immersed in transmedia knowledge, ideation becomes a medium for generating thought-action figures capable of moving and transforming both Geeks and non-Geeks.

As we have seen, the remix of *episteme* and *doxa* (expert and common knowledge), *logos* and *mythos* (logic and story), and *eidos* and *imagos* (idea and image) lies at the heart of transmedia knowledge and critical design. It also beats in the heart of CATs between conceptual, aesthetic, and technical dimensions. Bertolt Brecht's Epic Theater similarly sought to both instruct and entertain, while Antonin Artaud's Theater of Cruelty combined metaphysics and an affective athleticism. Significantly, in her book *Resonate: Creating Visual Stories That Transform Audiences*, Nancy Duarte

Article	Presentation	Story
Written explanation of ideas and evidence	Oral delivery to explain and persuade	Artistic presentation of emotion and experience
Logical, argumentative	Facts and storytelling	Dramatic/narrative plot
Interpret, analyze, evaluate	Illuminate, interpret	Experience, express, sense
Findings, evidence	Motivation, engagement	Memories, associations
Clear, simple style	Believable, engaging	Expressive, theatrical

Fig. 2.4 Table based on *Resonate* by Nancy Duarte (2010)

defines multimedia presentations as combining elements of factual reports and artistic stories.[27] Her table can be revised to compare scholarly articles and gain insights into the recombinant nature of transmedia knowledge (Fig. 2.4).

A professional communication consultant, Duarte advised Al Gore on his film *An Inconvenient Truth.* In her work, she incorporates narrative theory and visual communication. Reworking Edmund Tufte's concept of graphical 'sparkline,'[28] Duarte has developed an influential presentation form featuring a narrative sparkline, a structure she finds at work in live presentations ranging from Martin Luther King, Jr.'s 'I Have a Dream' speech to Steve Jobs' original iPhone pitch (Fig. 2.5). In simplified form, Duarte's narrative sparkline has two dimensions. Horizontally, it moves left to right from beginning to middle to end, following the classic three-act structure found in dramas, novels, and popular films: set up/confrontation/resolution. Vertically, she defines two levels which the sparkline alternates between: a base 'what is' (the current situation) and a higher 'what could be' level (an imagined future). Over the course of the presentation, the presenter's goal is not to explain, instruct, or lecture but rather transport audiences from 'what is' or the set up to 'what could be,' the resolution that Duarte characterizes as a 'state of bliss.' The sparkline's

[27] Nancy Duarte, *Resonate* (Hoboken, NJ: Wiley, 2010).

[28] Tufte defines sparklines as 'data-intense, design-simple, word-sized graphics.' See *Beautiful Evidence* (Cheshire CT: Graphics Press, 2006), 47–63.

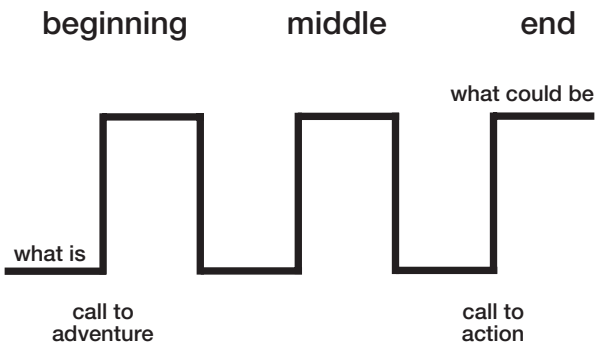

Fig. 2.5 Diagram based on *Resonate* by Nancy Duarte (2010)

beginning section ends with 'turning point 1,' an explicit 'call to adventure' that asks audiences to embrace the challenge of moving from 'what is' to 'what could be,' while the closing section begins with 'turning point 2,' a 'call to action,' an explicit appeal for the audience to take specific action to reach the state of bliss.

In the sparkline's longer middle section, Duarte situates a series of contrasts between What Is and What Could Be: this confrontation between present situation and possible future resonates with the audience's desire for transformation, whether it be personal or organizational. She also recommends inserting STAR moments (Something They'll Always Remember), such as a startling piece of evidence, a memorable anecdote, or a funny acronym, so the audiences can take away an experience that leads them back into the entire presentation. (The ancient arts of memory likewise employ striking images that aid the construction and delivery of arguments.) Duarte's sparkline is thus a resonance machine whose rhythms allow presenters to tune into audience expectations and experience base, their plans and desires—and then spark a transformation. The calls to adventure and action derive from the Hero's Cycle, a mythic archetype developed by Joseph Campbell and then extensively used by Hollywood scriptwriters for blockbusters from *Star Wars* to *Frozen*. These calls are directed to the hero of the story: in the case of presentations and other transmedia genres, *the protagonist is the audience*. Duarte stresses that *the audience is the hero of the story we share with them*.

Situating the audience as the hero resonates strongly with the desire of liberal arts colleges to communicate their value to diverse audiences, espe-

cially communities and policymakers. Reversing and displacing the opposition between *episteme* and *doxa*, the expert Geek is not the protagonist, the non-Geek is. We Geeks become sidekicks, helpers, co-creators in others' quests. This transformation of the specialist's role has profound implications for specific community-based research projects and, more generally, for the function of higher education in contemporary society. In the modern grand narratives described by Lyotard, scholars pose as heroes (or sometimes anti-heroes) of society; engaging postmodern optimization matrices, critical designers work alongside others critiquing power setups, identifying paradoxes and injustices, and inventing new collaborative ways to inject values of cultural efficacy into social systems obsessed with organization efficiency and technical effectiveness.

How to concretize the efficacy of foregrounding the Why within a narrative sparklines? In StudioLab workshops, participants sometimes bring their laptops, a current project, and a set of images. After learning the CAT design frame, LeFever's spectrum, and Duarte's sparkline, they transmediate their project into a PowerPoint, poster, or PechaKucha using LeFever's spectrum and Duarte's sparkline, whose reconfigured diagrams we overlay for them (Fig. 2.6):

The simple overlay demonstrates McLuhan's insight that in an age of information overload, all we have left is pattern recognition, the spark of conductive logic. Let's look at some patterns in our recombinant diagram. Starting on the lower left, the side of less understanding, we see that LeFever's *context* coincides with Duarte's introductory What Is, and that

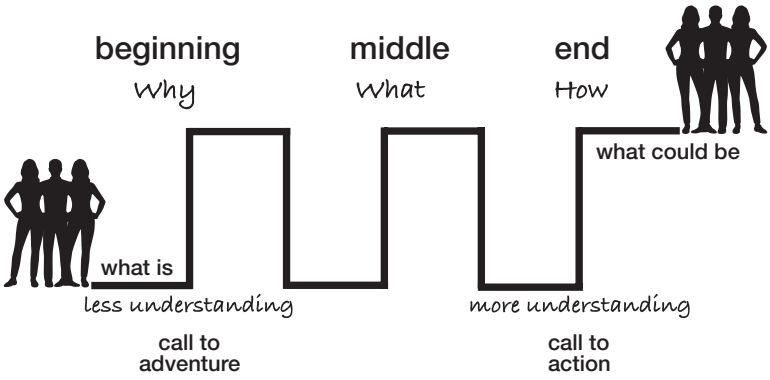

Fig. 2.6 Diagram based on Duarte (2010) and LeFever (2012)

Duarte's *call to adventure* and *first turning point* entail a *story* that conveys LeFever's Why and also introduces the audience to the *gap* separating them from What Could Be. The story delivers the stakes and significance of the presentation and serves as the entryway into the presentation's main body. In the middle sections, the contrasts between What Is and What Could Be work to introduce the main argument (the What), first through *connections* to the story, and then through direct *descriptions*. Finally, Duarte's second turning point, the call to action, occurs fully in the How. This How functions in two ways: it explains the details of the What and presents concrete steps the audience can take to overcome the gap and reach What Could Be.

In StudioLab workshops, participants commonly take 30 minutes to articulate and sketch the Why-What-How of their work into a narrative sparkline for multiple audiences. As they wrestle with their ideas, stretching their own mental muscles, they are becoming makers, thinkers making themselves thought-action figures.

What Could Be: A Dancing Plato

Imagine this sparkline: The What Is is Plato's Fight Club amidst the crisis of liberal arts, higher education fighting for its place in the contemporary world, while What Could Be is a new configuration of *episteme* and *doxa*, campus and community, education and life. *StudioLab Manifesto* issues a call to adventure, initially captured broadly in the figure of Plato wrestling first with poetry and sophistry and later, through his Academy's legacy, with indigenous knowledges, popular cultures, and now digitality as the reinscription of oral and literate apparatuses within sociotechnical networks of material and digital flows. The call to action: use StudioLab to transform the critical thinking and writing of specialists into the critical design and transmedia knowledge of multiple players: specialists, local community members, policymakers, and the general public.

Moving across this imagined sparkline, we articulate StudioLab's call to adventure chapter by chapter through its three missions, having just begun with the first one: to democratize digitality, to build on the liberal arts' long-standing contribution to democratizing literacy within the context of a new apparatus of power and knowledge. Here, the call to action is 'become maker,' enable the self-transformation of passive media consumers into active producers of transmedia knowledge. In relation to ideational knowledge, transmedia knowledge entails a new image of thought and a new figure of the thinker. The thinker stands up, tries out

some steps, makes some media. Animating the ideas of literacy, becoming maker produces dynamic thought-action figures. Becoming maker is becoming thought-action figure, remaking thought-action oneself.

What could be? For starters, let us imagine a dancing Plato, freed from the opposition between earthly and cosmic music. This opposition assigned the muses of music-making and dance to *Gymnasium* while elevating *mouiske* in higher education to the Harmony of the Spheres, to forms, number, ratio—in short, to a *musica speculativa* that harmonizes *eidos* and *logos* on micro- and macrocosmic scales. Overcoming the dangerous excesses of local music and dance traditions with Pythagorean geometry, this cosmic choreography constituted the heights of Plato's Academy.[29]

Yet now, in a basement symposium near the city walls, Plato is partying with wrestlers, rhapsodists, and outcasts. He turns up the bass and switches on a Cagean noise machine with Mandelbrot projector. The patterns defy logic. They've discovered the secret to theory is a good set of subwoofers. As rhythm overcomes melody, Plato's symposium transmediates *The Republic* into a video for the Dance Your Discipline competition.[30] Beyond making, what sorts of collaboration does such a scene entail? What sort of world could this be? Those of builders and cosmographers.

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[29] See Graham Pont, "Plato's Philosophy of Dance" (*Dance, Spectacle, and the Body Politick, 1250–1750*, ed. Jennifer Nevile. Bloomington: Indiana University Press, 2008).

[30] The figure of a dancing Plato has other precedents. In *The Birth of Tragedy*, Nietzsche conjures three figures, Dionysus, Apollo, and Socrates, posing them as gods and instincts. For him, the death of tragedy occurs with Euripides, when the artistic Apollo forsakes the musical Dionysus for the theoretical Socrates. With Wagner, Nietzsche foresaw a new birth of tragedy, which he posed as a music-making Socrates, inspired by the philosopher's own turn to music while awaiting the hemlock *pharmakon*, thus fusing Dionysus with theorist. In the *Epinomis* dialogue attributed to Plato or his school, the Stranger anticipates the Nietzsche of *The Birth of Tragedy*. And then there is *The Gay Science* and Ariadne.

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