

**Out of Thin Air:
Metaphor, Imagination, and Design
in Communications Studies**

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“With 32 wondrous paths of Wisdom engrave Yah, the Lord of Hosts... and create His universe with three books, with text (Sepher), with number (Sephar), and with communication (Sippur).”
Sepher Yitzirah, The Book of Creation 1:1¹

“The best way to prevent the future is to predict it.”
Ray Bradbury²

Permanently carved on the face of Karl Marx's tomb is his famous aphorism “The philosophers have only interpreted the world in various ways; the point is to change it.”³ While it is somewhat unfair to critically dissect a pithy one-liner, this statement is both misleading and suggestive. It is also a compelling starting point for an exploration of some of the methodological gaps in contemporary communication studies, and more generally, gaps in our appreciation of other areas of intellectual inquiry.

Marx's formulation encapsulates a perennial tension in the academy, the balance between disinterested interpretation and advocacy for social change. This issue raises difficult questions concerning objectivity and authority, the role of the theorist in society, academic freedom, and the relationship of philosophy to the material world. What is the relationship between subjectivity and objectivity in scholarship, and how can the two be reconciled? What responsibilities does a modern scholar, as a citizen of a global society, have towards the object of their inquiry? What are some of the methods utilized by various disciplines and professions to balance these conflicting tensions?

This essay begins by examining these questions, especially as they pertain to the social sciences and the field of communications. From there, we will examine the implications of this analysis and examine the similarities and connections to other areas of knowledge production, such as journalism and education. We will also examine integrative methods used in various disciplines from analytical philosophy to architecture.

Subjective Realities

Marx was certainly not the first activist intellectual, as many of the greatest thinkers of the canon can easily be characterized as revolutionary.⁴ Intellectual history includes many philosophers, writers, artists, and scientists who were motivated by the desire to improve the human condition and often risked their lives in pursuit of this commitment. Nonetheless, the concern expressed by Marx is familiar – many scholars are preoccupied with understanding the world (increasingly, a very narrow fragment of it), but do not act on this knowledge once it is acquired. A deep understanding of the world is a vital precondition for subsequent critique or advocacy, but Marx is dismayed by those who do not follow through on the natural extension of their work.

Apart from the inaccuracy of the claim that philosophers were historically uninterested in changing the world, Marx's statement is also slippery since interpretation *itself* is a form of action which can change the world. Interpretation manifests as action though the subjective judgments intrinsically bound to the act of interpretation, and more strongly, through the reflexive role that interpretation plays in shaping reality itself. A more nuanced extension of Marx's argument advocates that scholarship should be more mindful and self-conscious of its action, and examine various methods to improve our reflective and projective capacities.

Interpretation may influence the world with or without a deliberate and purposeful intent, so the only responsible approach for scholars is to pay attention to the probable changes that may precipitate from successful scholarship and the spread of ideas.

A reluctance to act prohibits many scholars from overtly expressing their subjective judgments, even though a subjective viewpoint is necessarily implied by their work. Of course, a subjective viewpoint is not identical to activism, but the ideology of objectivity is often invoked against scholarship that is accused of being interested and biased. Communication is a form of action, and scholars who make normative judgments and assertions risk being labeled 'stooges' or 'cheerleaders'.⁵ They may even jeopardize their tenure appointment in an increasingly politicized academic environment.

The profession of Journalism has long struggled with the ideal of objectivity, and there is a great deal of analysis elaborating on the forms of subjectivity inherent in the production of news. Many of these critical observations can be applied directly to academic production. Academic subjectivity is expressed in a variety of ways ranging from the scholar's research agenda, the questions they ask (or omit), the language and conceptual apparatus they use to formulate their argument and findings, the meta-narratives underlying their hypotheses, the communities with whom they are engaged in discourse, and the sources and traditions they invoke. This kind of subjectivity has not always been widely recognized, since the most salient forms of subjective expression take the form of normative propositions, prescribing how the world *should* or *ought* be.

In *Discovering the News, A Social History of American Newspapers* Michael Schudson writes:

“Journalists came to believe in objectivity to the extent that they did, because they wanted to, needed to, were forced by ordinary human aspiration to seek escape from their own deep convictions of doubt and drift... Surely, objectivity as an ideal has been used and is still used, even disingenuously, as a camouflage for power. But its source lies deeper, in a need to cover over neither authority nor privilege, but the disappointment of the modern gaze.”⁶

Social Scientists are susceptible to similar doubts and drifts in their pursuit of objectivity and their envy of (an illusory) ideal of objectivity in the natural sciences. While the profession of Journalism has not yet succeeded in reconciling the tension between subjectivity and objectivity, it seems that the debate within the academy would benefit from an encounter with the discourse around these issues in Journalism.

For example, the belief that objectivity is best represented through impartial neutrality and a well balanced presentation of both sides of an issue is not the only expression of this value. As Georgina Born finds in her ethnography of the BBC, their sense of objectivity is less about neutrality and more about skepticism. "The only thing one can do that's impartial is go after everyone with the same vigor. ... We spread our cynicism — or however you want to describe our approach — around. That's the only sense in which we can be impartial. (pp. 384-5)"⁷ This alternate sense of objectivity is very similar in flavor and tone to the vigorous argumentative style of analytic philosophers.

Kicked Out of the Reality Club

Mainstream theorists, in varying degrees, have accepted and internalized the notion that subjectivity infuses all forms of human production, since everything we create is imbued with value and meaning. But buried in this notion is a much stronger claim that inverts the conventional relation between language/communication and reality. Not only does subjectivity infuse our production, but it may even play a role in creating and shaping reality itself. James Carey takes up this issue in his famous essay *A Cultural Approach to Communication*.

“Communication is a symbolic process whereby reality is produced, maintained, repaired, and transformed (p. 23) ... Reality is not given, not humanely existent, independent of language and toward which language stands as a pale refraction. Rather, reality is brought into existence is produced, by communication – by, in short, the construction, apprehension, and utilization of symbolic forms (p. 25)... Our models of communication, consequently, create what they disingenuously pretend they merely describe (p. 32)”.

Language doesn't describe reality, rather the inverse – reality as we know it and understand it does not exist outside of symbolic communication, it is brought into being by this communication. The objective “view from nowhere”⁸ is illusory, and the assumption that the world is composed of distinct objects with inherent properties and fixed relations is wrong.

Carey denies that he is making “any large metaphysical claims”, although his world view differs radically from popular models of objectivity and reality. While many theorists pay lip service to the idea that reality is socially constructed, there is a strong version of this claim that is hard for many to take seriously, and profound implications if they do. If ideas and their expression actually play a fundamental role in the fabrication of reality then we all bear some responsibility for the state of society and the world. Perhaps this claim is easiest to appreciate in the context of educators shaping the minds of their students, which is a valid perspective to take with all forms of communication that attempt to transmit information..

Carey's perspective resonates strongly with modern philosophers' understanding of the relationship between language and reality, and the role of metaphor in our co-construction of our shared world. Philosophers such as Quine, Wittgenstein, and Lakoff have written extensively on the relationship between language, meaning, and reality and their positions are consistent with Carey's thumbnail characterization. An attempt to situate Carey's philosophy within the context of the analytical tradition is beyond the scope of this essay, but his intuitions and intellectual style resonates strongly with these philosophers of language and mind. His reliance on common sense language and concepts, his investigation of concepts through the examination of their specific sites of usage, and the language games that he invokes and plays are all consistent with the methodologies endorsed and practiced by these philosophers. While Carey likely differs with this tradition on his choice of interesting (and valid) questions and the importance of culture and society in any theory of meaning, there is significant overlap in their foundational orientations.

If we take seriously the idea that our communications “create what they disingenuously pretend they merely describe” more cracks begin to appear in Marx's original statement. The claim that “philosophers have *only* interpreted the world” is seemingly oblivious to the active projective role that interpretation plays in shaping the world. We can amend his statement to conform with his likely sentiment, but a century and a half of philosophy and social theory challenge the assumptions behind its original formulation. If all acts of interpretation carry with them the potential to craft and change reality, the important questions are whether scholarship is self-conscious and reflective about this dynamic, and how to optimize scholarly production in this context.

While this idea strikes some as quasi-mystical, the essence of Carey's philosophy surfaced recently in the popular press during a political exchange between the investigative journalist Ron Suskind and a senior advisor to President George W. Bush:

“The aide said that guys like me were “in what we call the reality-based community,” which he defined as people who “believe that solutions emerge from your judicious study of discernible reality.” I nodded and murmured something about enlightenment principles and empiricism. He cut me off. “That's not the way the world really works anymore,” he continued. “We're an empire now, and when we act, we create our own reality. And while you're studying that reality -- judiciously, as you will -- we'll act again, creating other new realities, which you can study too, and that's how things will sort out. We're history's actors . . . and you, all of you, will be left to just study what we do.”⁹

Most scholars hope that their work will have an impact, at least within their field and their perceived spheres of influence. But the challenge posed by Carey's metaphysics to communications scholars is whether they will create, or merely study, their own reality. Communications studies is field “in which our subject matter doubles back on itself and presents us with a host of ethical problems”¹⁰. It is a field where we “communicate about communication itself”, and frequently mediate on the problematics of nature of human experience. The possibility for social transformation, whether through precipitating changes or maintaining the status quo, is inherent in the composition of this kind of work. Whether communications scholars will be history's actors or audience, and whether their influence is a motivating intention or an unintentional side effect, the possibility of catalyzing impacts is distinct and real.

Philosophers of Communication

Marx's intellectual progeny, the Frankfurt School, elaborated on his critical orientation with their understanding of the role of interpretation in shaping the world, and the responsibilities of the theorist towards society. In an essay detailing his approach to Critical Theory, Max Horkheimer explains:

Critical Theory “is not just a research hypothesis which shows its value in the ongoing business of men. It is an essential element in the historical effort to create a world which satisfies the needs and the powers of men... the theory never aims simply at an increase of knowledge as such. Its goal is man's emancipation from slavery.”¹¹

Horkeimer strongly criticizes the application of society's knowledge and capital towards utilitarian ends, and argues that this wealth needs to be directed towards social justice and the development of a better world. When presented directly with this proposition, it is difficult to imagine its opponents. Who could argue against working towards making the world a better place?

Objections to this theoretical orientation appear under a variety of guises, and are quite commonplace. One form of opposition is the adherence to the ideology of objectivity, which can be motivated by many factors including political agendas, or a misunderstanding of the relation between scholarship and objectivity. Other dissension is based on the detachment, neglect, and complacency of scholars and educators who do not actively and self-consciously embrace the implications of their research and teaching. In many situations, the choice not to engage directly in the advancement of a better world merely serves to reinforce and maintain the status quo – and especially for fields which engage directly with issues relating to identity, culture, and society, apolitical communication is impossible.

Horkeimer's pronouncement places a heavy demand on the role of theory in the world, and it is reasonable to wonder if mere words can ever live up to these grand aspirations. Our earlier analysis suggests that these goals can be pursued both tactically and strategically. Strategic commitments towards a critical theory are usually overt, but the tactical day-to-day methods of a theorist are difficult to spot, but important as well. Looking at history, it is easy to see how ideas can change the world. What is harder to discern is how these ideas originate and spread. The deliberate pursuit of methods and operations intended to foster positive creative transformations include elements which percolate through all layers of the critical endeavor, from the mundane to the meta. By closely studying these percolations we may discover reproducible patterns, which can be reapplied to our current circumstances.

We can observe some of the tactical moves that the Frankfurt School employed which demonstrate this commitment in Adorno's attack on Paul Lazarsfeld's administrative research program. Lazarsfeld was a sociologist and mass communications researcher who believed that administrative and critical research could be disentangled from one another. Adorno criticized this position and made efforts to detail how the two were inextricably coupled. In *A Social Critique of Music* he teases apart the assumptions that are implicit in purportedly administrative research programs:

“The aim itself, the tool by which we achieve it, and the persons upon whom it works are generally taken for granted in this procedure. The guiding interest behind such investigations is basically one of *administrative* technique: how to manipulate the masses. ... I would like to suggest an approach that is antagonistic to exploitive and at least supplementary to benevolent administrative research. It abandons the form of question indicated by a sentence like: How can we, under given conditions, best further certain aims? On the contrary, this approach in some cases questions the aims and in all cases the successful accomplishment of the aims under the given conditions. ... One should not study the attitudes of listeners, without considering how far these attitudes reflect broader social behavior patterns and, even more, how far they are conditioned by the structure of society as a whole.

Both Horkeimer and Adorno shared an appreciation for the importance of philosophy in the pursuit of knowledge. The study of philosophy is often conceived of according to conventional divisions between philosophical areas of inquiry – pertaining to what is, what is knowable, and what ought to be. But another way to think about philosophy is as a disciplined method for figuring out the right questions to ask – questions to ask the external world, the internal world, and everything in between. The classic philosophical stance can be construed as more of a methodology than a discipline, and throughout history it has regularly parented and spun off other disciplines, leaving nothing but the hardest questions in its purview. The challenge of figuring out the right questions to ask – including the concepts that are used to structure and formulate these questions, and the forms that valid answers resemble – is a far more difficult task than most casually estimate. Most well established scientific disciplines began as undifferentiated, under-theorized topics in philosophy. Physics, cosmology, evolutionary biology, chemistry, and psychology, to name a few, all began as philosophical inquiries into the nature of reality. Later, as their paradigmatic concepts and assumptions crystallized, each in turn was spun off from philosophy to form their own scientific disciplines. Branches of science are born out of primordial theory when philosophers reach some consensus on the right questions to ask nature.

Hypnagogic Daydreams

Philosophers are frequently misunderstood as academic bystanders, speculating from the safe distance of their armchairs, but their methods can be quite rigorous and grounded. Beyond their relentless mandate to challenge all assumptions and accept no theory unturned, philosophers have developed a number of techniques for interrogating experience and investigating phenomena. They frequently utilize imaginative thought experiments, playful what-if scenarios, and memorable fictional simplifications to help define the space of possibilities for the domain they are exploring. These examples often lie at the boundary of the domain, with the intuitive understanding that topics are best understood through the exploration of their boundary conditions.

Coming to terms with a complex domain is a daunting task, for which Plato suggests a concrete methodology: “First, the comprehension of scattered particulars in one idea... Secondly, there is the faculty of division according to the natural idea or members.”¹² James Carey articulates a strategy which closely mirrors Plato’s in preparation for his analysis of the effects of the telegraph. “Concentrate on the effect of the telegraph on ordinary ideas: the coordinates of thought, the natural attitude, practical consciousness... not through frontal assault but, rather, through the detailed investigation of a couple of sites where those effects can be most clearly observed.”¹³ This style of inquiry provides us with a basis for approaching the analysis of complexity which otherwise appear irreducible or intractable. A thorough inquiry includes a reconnaissance of boundary conditions alongside typical and paradigmatic examples.

Contrary to popular belief, philosophers are not ignorant or detached from empirical evidence. Many branches of philosophy operate in very close proximity to disciplines adjacent to their inquiry. For example, philosophers of mind frequently cite neurological studies and closely follow the developments in artificial intelligence as a matter of course. It would be

disingenuous not to do so. They also regularly draw upon sources such as popular culture, science fiction, and introspective experience. This interdisciplinary evidence contributes to the speculative narratives and counter-factual¹⁴ devices philosophers often construct to help them break free from a field's paradigmatic blinders. Examples and counter-examples from these fields of practice are used to filter and select between competing theories. Empirical observations are the fodder for many extrapolations and embellishments which are used to garden and prune a space of possibilities into a space of interest. This kind of theoretical prep work can help bracket incidental and contingent concerns, and can also isolate the core areas of interest, reduced to their simplest form, which still retains the relevant richness without the incidental the complexity. Crucially, this imaginative foreplay primes a subject for detailed investigation.

This conceptual ground work need not produce a unified theory of everything for it to be successful. In fact, it can be very beneficial to introduce a dynamic conceptual model, as distinct as possible from the hypothesis and arguments which are subsequently constructed utilizing the model. This style permits the acceptance and reuse of the model independent of the particular arguments mobilized around it. Emerging topics of discourse require a special attention to the conceptual apparatus from which theories and hypothesis are construed, since we do not yet have a common way to describe these phenomena. As we have seen earlier, the models cannot be entirely separated from the arguments which invoke them, but there is still great value in introducing common models so that subsequent interlocutors speak to each other and not past each other. A common language of higher-order primitives also allows practitioners to easily refer to complicated chunks of concepts, elevating the discourse by avoiding the necessity to start at ground level at the beginning of every argument. This kind of common language is not identical to jargon, as it can also exist as a popular collection of stories and examples that are rich enough that they can be drawn upon to support or refute new theories.

Design Rituals

Directly analogous to our earlier discussion of passive subjectivity and projective subjectivity is the relationship between philosophical proto-theorizing and active design. The field of architecture has developed pedagogies and methodologies around the design of hypothetical environments and their subsequent critique. These designs are developed and criticized using the theoretical apparatus studied in the field, and this practice is an effective means to exercise these models and theories.

Mark Wigley, the Dean of Columbia's School of Architecture describes the school's mission in a statement entitled *The Future of the Architect*:

“Architecture is a set of endlessly absorbing questions for our society rather than a set of clearly defined objects with particular effects. Architects are public intellectuals, crafting forms that allow others to see the world differently and perhaps to live differently. The real gift of the best architects is to produce a kind of hesitation in the routines of contemporary life, an opening in which new potentials are offered, new patterns, rhythms, moods, sensations, pleasures, connections, and perceptions. The architect's buildings are placed in the city like the books of a thoughtful novelist might

be placed in a newsstand in a railway station, embedding the possibility of a rewarding detour amongst all the routines, a seemingly minor detour that might ultimately change the meaning of everything else. The architect crafts an invitation to think and act differently.”¹⁵

Much of the significance of architecture as a leading art can be attributed to the fact that large amounts of capital finance its growth. The buildings are going up, one way or another. Like the academic forms of production we discussed earlier, the question for architects is how self-conscious and reflective they are about their inevitable choices. Architects have traditionally approached their subject deliberately and purposefully, on the other side of the spectrum from most social scientists. If anything, architects are over-confident about the impact that their work will have in shaping society, and their claims are often regarded as pompous hubris.

The education of an architect overlaps significantly with communication scholars, and social, cultural, and critical theory comprise much of their studies. Their encounter with these concepts is visceral as well as formal, as their curriculum also includes design studios where these theories are activated in practice. The ritual of the studio critique also functions as an occasion to apply theory to these designs. Their pragmatic blend of theory and practice probably emerged from their proximity to the professional field of architecture, but theoretical architects also occupy an important position in the academy, and great deal of their curriculum has no direct correlation to engineering or building construction.

Architects have also utilized “pattern languages”, an instrument prior to theoretical models and fixed hypotheses. Pattern languages were pioneered by the architect Christopher Alexander:

“The elements of this language are entities called patterns. Each pattern describes a problem which occurs over and over again in our environment, and then describes the core solution of that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice... No pattern is an isolated entity. Each pattern can exist in the world, only to the extent that it is supported by other patterns... A pattern language is a network of patterns that call upon one another. Patterns help us remember insights and knowledge about design and can be used in combination to create solutions.”¹⁶

The benefits of introducing and adopting a pattern language include the acknowledgment and naming of common problems in a field, a catalog of the various kinds of approaches and solutions, along with their trade-offs and relatives. A pattern language can form the basis of a proto-theory in a field, introducing the concepts which are later cast as hypotheses. Pattern languages are also useful in their own right, as a means of describing and designing solutions to complex problems which may not have a fixed, definite answers. These named patterns are similar in many ways to the fictionalized named problematics that philosophers often use, though a pattern language has the advantage of relating discrete patterns to each other within the conceptual network. Also, the formal structure of pattern descriptions typically specify the influential forces as well as the pros and cons of applying different kinds of solutions to the problem.

Architects have developed structured methods and techniques for advocating good design which defy the cautions which dominate much of American communications studies. As a field which straddles the fine arts, architects acknowledge that their work is inherently subjective and embodies ideologies. While their designs are constrained by the laws of physics, their critiques are not motivated by empirical considerations. They regularly make claims about the ways in which the environments they design will shape, catalyze, and favor certain kinds of social interactions over others. They also have strong opinions about what kinds of interactions are favorable, which are often founded upon conceptions of citizenship, freedom, and individuality. Their immersion in the practical application of theory gives them a fresh perspective on the immediacy and relevance of theory in practice. Even if the architecture student never goes on to professionally design any spaces these techniques have a very strong pedagogical value.

Communicative Potentials

Communications studies is a diverse interdisciplinary field without great cohesion, so it is silly to overgeneralize its gaps. Many of the techniques described in this essay exist on the fringe or in isolated pockets of the field, but they are not systematically prevalent. Much of the research represented in Peters & Simonson's *Mass Communication and American Social Thought* is concerned with the past or the present, without as much attention towards the future. American communications theorists are less concerned with situating social and communicative phenomena within a space of logical and historical possibilities than they are in understanding the social circumstances that happen to exist. How might these intellectual styles and methods described in this essay be more tightly integrated into mainstream communications studies?

The field of communication studies does not yet share a common language beyond a few generalized concepts such as mass communication, transmission and ritual. Considering the importance of Carey's distinction between transmission and ritual communication, we should develop and share canonical examples illustrating this distinction, through paradigmatic and borderline sites of inquiry. Carey began this work with his example of reading the newspaper in the morning, but this distinction is hard to teach without more examples. The development of memorable and compelling examples should be actively encouraged.

Throughout this semester we have seen the power of shared storytelling in other fields, as Geertz's Balinese cocks¹⁷, Goffman's surgeons¹⁸, and Robert Moses' bridges¹⁹ demonstrate. Communication studies needs more powerful parables, and they only need to be interesting, not necessarily historically accurate to be useful theoretical instruments. Historical case studies have not been cataloged in ways that situate important examples and variations within a coherent and manageable possibility space. Ideally, this space would be adjusted and modified to accommodate emerging communicative and organizational forms. Eventually these constructs could be used to identify and design the communicative landscapes of the future.

A wider use of counter-factuals and thought experiments is another way that communication studies can purposefully extend its imaginative reach. In John Peters' *Speaking into the Air*:

A History of the Idea of Communication he explores the disembodiment of communication through encounters with angels, extraterrestrials, machines, and animals²⁰. Although he introduces these devices in his historical account of the idea of communication, they still stand out as unusual in the reality based world of communications studies. He also demonstrates that these fanciful accounts are relevant in our analysis of communication across national, gender, class, generation, race, language, and culture. But fanciful conversations like Peters' seem the exception rather than the rule.

A variety of professional disciplines, such as software engineering, education, and sustainable development, have fallen under the spell of pattern languages. There is even a community working towards developing a pattern language of Living Communication²¹ to describe the domain of civic and community information and communication. However, for a pattern language to become truly effective it needs to be adopted by a large enough community that the common language is meaningful in a wide variety of contexts. It is not surprising the living communication pattern language was initiated by the Computer Professionals for Social Responsibility, as the emphasis on these kinds of free-form research methodologies are not widely appreciated by traditional communications scholars.

The field would greatly benefit from a deliberate cultivation of its collective imagination. This would help craft broader models of the cultural, social, and technological forces in play and the impacts at stake. Closer proximity and interactions with art, law, business, and computer science would all feed directly back into this exploration. A deeper study of designs emerging from places like the MIT Media Lab, NYU's Interactive Telecommunications Program (in the Tisch School of the Arts), and Carnegie Mellon's Entertainment Technology Center (in the School of Drama), would greatly benefit communication scholars seeking to validate the utility and predictive value of their theories. These practices already incorporate communications studies in their curriculum, but the inclusion is not generally reciprocal. A nexus of inter-disciplinary proximity seems more prevalent Europe, where festivals like Ars Electronica, a festival of art, technology and society, has been held since 1979²².

My attendance at the 2006 Wikimania conference underscored the importance of these kinds of exchanges. The handful of critical cultural theorists present were amazed at the organizational, cultural, and communicative practices which were banal and mundane to Wikipedians and free software developers. In turn, the theorists brought their formidable wisdom and experience to the pitfalls these projects were facing. The technorati communities are poised to fall victim to the folly that science, technology, and rationality will necessarily lead to a better world, and they must they learn to temper their giddiness and euphoria with constructive critical theory. Communications scholars are in a position to help explain and shape these developments against the backdrop of history and theory.

Exercises in the design and critique of communications environments would likely improve communications scholars' ability to analyze and understand existing domains. Design research offers the field an alternate grounding the traditional quantitative or ethnographic methods. Preliminary work in this area is beginning to enter the discourse through the work of scholars such as Lev Manovich²³, Mary Flanagan²⁴, Warren Sack²⁵. All of these scholars employ design research methods, and incorporate multimedia projects and software design in their scholarship. Their experiments with spaces of possibilities feed back into their

theoretical work and provide innovative insights.

These speculative and projective methods are inherently subjective, but as I preemptively argued in the first section of this paper, this kind of subjectivity is pervasive in all forms of human production so they should not be dismissed on these grounds. They also suggest techniques for the self-conscious influential directions that the Frankfurt school and Carey recognized as central imperatives for studying communication. The methods in analytical philosophy and architecture are an encouraging study for communications scholars since these fields produce meaningful results and are comfortable and confident with their position in the academy. They are not obsessed with quantitative methods as the predominant authority for supporting hypotheses. Their cultivation of creativity through thought experiments, hypothetical narratives, and iterative design and critique could freshly infuse study of communication with a blast of the future. A great deal of this style of thinking already exists within the field, and on its periphery, but an explicit embrace of these methods may revitalize research in unexpected directions.

The malleability of communicative environments in the Information Age means that now, more than ever, communication theory can play an active, self-determined role in shaping reality, instead of merely describing it. Software developers have been unwittingly handed the keys to production and distribution in society and they should be working closely with social scientists, architects, artists, media theorists, and communications scholars so they can we can purposefully co-construct our consensual reality.

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- 21 Doug Schuler, "A Pattern Language for Living Communication" <<http://www.scn.org/sphere/patterns/pdc-02.html>> (December 14, 2007).
- 22 <<http://www.aec.at/en/>> Ars Electronica is a triangulation of SXSW (South By South West), Burning Man, and an academic conference, and publishes their yearly proceedings with great critical acclaim.
- 23 <<http://www.manovich.net/>>
- 24 <<http://maryflanagan.com/>>
- 25 <<http://people.ucsc.edu/~wsack/>>