

A watercolor illustration by Ruben Hickman. The top half of the image is dominated by a large, dark, textured canopy that resembles a massive, dripping umbrella or a thick layer of paint. From the bottom edge of this canopy, several thick, vertical drips of dark brown and black paint hang down. Below the drips, a crowd of people is depicted in a loose, sketchy style. The figures are rendered in dark, muted colors, mostly browns and greys, with some highlights in white and light blue. They appear to be standing in a line or a group, looking towards the right. The background is a mix of light and dark washes, creating a sense of depth and atmosphere. The overall style is expressive and somewhat somber.

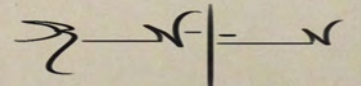
Preface

ISSUE 02 | **CROWDS AND CLOUDS**

ILLUSTRATION: RUBEN HICKMAN

THIS ISSUE OF LIMN AIMS to raise the level of discussion about new social media, crowdsourcing, cloud computing, big data, and Internet revolutions. Too often, writing about these things follows well-worn paths of argument—paths that become increasingly worn with every rehearsal. The pieces herein seek to interrupt that path, to cross it at odd angles, to find another way through the complex thicket of technology and society.

Take for example the phenomenon known as “Big Data” and the miraculous new forms of problem-solving, knowledge creation and economic productivity it promises. The buzzwords of the brave new world of big data include “cloud computing,” “algorithms,” “filters,” “virtualization,” and “scalable infrastructures.” Terabytes and exabytes and petabytes of data

A handwritten signature or mark in the bottom right corner, consisting of stylized, overlapping lines and curves.

are produced by Facebook and Walmart who analyze them with complicated “machine learning algorithms” and “natural language processing.” Breathless claims (“data is in the driver’s seat” claims a recent *New York Times* article) and hyper-ventilatory rhetoric (“The end of theory” claimed *Wired*’s Chris Anderson) accompany these developments. The only alternative apparently, is to anxiously and darkly depict world without privacy.¹ The cloud of claims about cloud computing and big data settle into recognizable, if no less nebulous fog banks of enthusiasm or anxiety.

Or consider the Arab Spring of 2011, and the anniversary of the revolution in Egypt this year. The question has repeatedly been posed as to whether the Internet, specifically social media platforms like Facebook and Twitter, had *caused* the revolution. Two kinds of answers typically follow. First, the qualified yes: these technological media were necessary but not sufficient, they provided new capacities for organization that previous revolutions did not possess. Second, the concerted no: the technologies are important, but the necessary and sufficient *cause* of the revolution was “the people.” No one (except Biz Stone and Mark Zuckerberg) believes that these tools actually cause revolutions.²

Both answers miss the mark, but they nonetheless point to one of those well-worn paths of argument. On the one hand there are technologies that create new relationships, new capacities, or re-arrange existing relationships of knowledge and power. On the other hand, there are the reassuringly familiar collectivities—like “the people” or “the public” or “the community.” Sometimes information technologies are invoked as a threat to older forms of collective life; other times, especially in response to inflated claims about the power of those technologies, they are seen as irrelevant to the power of known collectives. Do information technologies connect existing collectivities or do they generate the conditions of possibility for new collectivities—maybe even new *kinds* of collectivity?

Over the last couple of decades many observers, both scholars and journalists, have clearly sensed that there is a problem here. The problem is an unsolved one, if the proliferation of recent terminology is any indication: *network societies*, *virtual communities*, *digital culture*, *cyber-cultures*, *social media*, *social software*, *digital natives*, *online communities*, *crowd-sourcing*, *crowd-funding*, *organizational networks*, *networked publics*, and so on.

Each of these terms conjugates an appar-

ently straightforward technological thing with an apparently straightforward collective of some kind. But the result is apparently not straightforward. Instead, each one poses anew an opposition between emergent technology and stable collectives, strengthening the idea that the two are of different orders. In some cases, these terms are optimistic propositions that older kinds of collectivities can be intensified or expanded; in other cases (e.g. *digital divides*, *information plantations*), the conjugations point to more pessimistic conclusions.

Lurking behind such terms and debates is a much more general question. Contemporary information technology brings into relief a long-standing tension about the constitution of large-scale collectivities: namely, do they actually exist in any meaningful sense before they are constituted? Or are they artifacts of their technological intermediation? This tension between “natural” forms of community and mediation – particularly technological mediation – is one of the oldest stories that moderns tell about themselves. These collectivities need not know themselves (the way “the people” is sometimes said to); they may not even know they exist until they are shown to themselves through the operations of knowledge making and technology.

In this issue of LIMN, we asked contributors to address the problem head-on, and to consider the *nature of representing and intervening in collectives*. To pull apart claims about technology and collective kinds, we engaged not only scholars of the present, but also of the past.

IN THE 1890S, IN EUROPE AND AMERICA, a new kind of collective became an object of analysis: the crowd. The most famous diagnostician of crowds, Gustave Le Bon, constructed this concept out of a concern about civilization and its discontents: the discovery of the unconscious; the new urban realities of density, electric light, and public transport; and the eminently Victorian interest in the primitive within.

What Le Bon and others recognized was not just that people sometimes gathered together in a particular way, but that this way of gathering was tied to a particular moment in history, to a set of technologies and environmental changes and to hypothesized features of human behavior. The “crowd” was not just a horde or a mob, and it certainly was not polite society or a community. But it was new, and it was something that needed to be studied.

Fears about the crowd gave way within a few decades to increasingly sophisticated

1. Steve Lohr, “The Age of Big Data,” *New York Times*, Sunday Review Section, Feb. 11th 2012. Curiously, the article is illustrated by the work of Chad Hagen, who creates “fictional data visualizations” that use no data. Chris Anderson, “The End of Theory,” *Wired* 16(7).

2. And Wael Ghonim, whose memoir *Revolution 2.0: A Memoir* (Houghton Mifflin Harcourt, 2012) has garnered the most attention of this sort, though a similar kind of opposition is repeated in nearly every discussion of the Arab spring.

talk about “mass society” and the values and dangers of propaganda. Similar diagnoses—from the high cultural narratives of the Frankfurt School to the handbooks of propaganda, or the strategies of the new mass medium of radio—accompanied this new collective kind. The tension was also visible in the rise of a form of market capitalism that relied on anonymity—a mode of asocial, or anonymous, sociality that would eventually become a familiar problem for marketing, demographic research and national welfare. New kinds of collectivities are linked in obscure ways to the technologies that might make relations among people real, or visible, and sometimes both.

A similar story can be told about all of the heterogenous collective kinds that feature in our world: the public, the people, the population, the nation, society, the community (both the 19th century primitive community of ethnology and 20th century voluntaristic ones of communitarianism), the demographic segment, the network, and so on (see the infographic on the following pages). All of them have to some degree been ‘naturalized’ through the varieties of cultural practices that take them for granted: the design of government; the collection of information about people, including their behaviors and biology; and the attempt to use them as heuristics for the control of large groups of people.

Such a question is likely more familiar to historians than it is to those who claim expertise about new technologies. For instance, historians of statistics like Ian Hacking, Ted Porter, Alain Desrosières or Mary Poovey have very clearly described the direct role of statistics in constituting “society” and “populations” in the 19th century. The technical characteristics of statistics coupled with national infrastructures of censuses, public health and policing called these new kinds of collectives – now taken for granted – into being. Sophisticated means of representing collectives, such as statistics, enable new forms of management, governance and intervention. They ultimately create a seemingly clear-cut concrete kind—a collective that people can occupy, analyze and ultimately govern.

Reflecting on the historical production of collective kinds can help orient and generate questions about these new phenomena—and some of the pieces in this issue provide that framing. In his piece, Alain Desrosières explains how debates about statistics after 1968 in France raised the question: “Do statistics have politics?” It pitted the “leftist” correspondence analy-

sis (a technique used most famously in Bourdieu’s *Distinction*) against the “rightist” neo-classical statistical thinking. As he points out, many of the same “leftist” approaches are now at the heart of data-mining and profiling projects in “big data.” Similarly, Rebecca Lemov’s piece reflects on the kind of collective implied by the everywhere-and-nowhere device of the focus group. It emerged at the height of cold-war mass society and reflected mass society’s desires back to it, through the artificial creation of representative individuals (who Joan Didion archly referred to as those “twenty people who lived in or near Cincinnati”). Both correspondence analysis and focus groups “map the collective” in different ways—either through a clever statistical technique that integrates the aggregate with the idiosyncratic or in the case of focus groups, by creating a space in which the idiosyncratic is allowed to stand for the aggregate in a way that is simultaneously convincing and absurd.

One of the most obvious collectives aggressively produced and represented in increasingly sophisticated ways is the political body of representative democracies—alternately figured as the people, the citizenry, the public sphere, the voting public etc. Daniel Kreiss and Maria Vidart outline for us what happens when social media collides with these classic collective kinds. The authors pose a double question of control: can social media be used to control voters and campaigners during an election, and conversely can social media itself be controlled? What kind of unruly new collective does it represent and what will be its effects on the established practices of mobilizing voters and winning campaigns?

The language of “crowds”—crowdsourcing, crowdfunding, the wisdom of crowds—has become one of the dominant modes of figuring the collective at the heart of new information technologies today. It is not the same crowd of *Le Bon*, though a comparison would no doubt prove fascinating. In their contributions, Alek Felstiner (a labor lawyer) and Roma Jhaveri (a former director at crowdfunder Kiva) present theoretical and practical accounts that explain clearly what these new techniques do well and what challenges or shortcomings they face. Lilly Irani shows us the detailed workings of Amazon Mechanical Turk—one of the most successful of the crowdsourcing endeavors. In her portrait she shows how AMT both solves problems that require human labor—the kinds of things computers still can’t do—at the same time that it creates a new problem of management.

Tarleton Gillespie takes us inside (or as close as we can get to) an algorithm: the one powering “Twitter Trends.” Big data is rarely interesting as such—rather it takes on significance in the moment when it is used to display a collective to itself, whether as a visualization of something or, as in the case of Twitter Trends, as a claim about some movement or trend of a collective rather than an individual nature. The question of whether such an algorithm can be wrong is not straightforward. Indeed, can one feel strongly—much less be right or wrong—about a *collective* without first finding a way to show that collective what it is?

Nick Seaver’s piece also lays open the workings of big data, in his case the technique of “collaborative filtering” at the heart of software like Netflix and Amazon recommendation systems. Collaborative filtering reveals just how central—and how unquestioned—the notion of individual preference has become, and how it is being programmed into the heart of the tools we use.

Because it is so easy to look directly to social media and the Internet when asking about things like crowds and collectives, shifting the focus into different environments can reveal things overlooked. Natasha Schüll’s contribution points us to the “touch-point collectives” of casino machine gambling. At the forefront of consumer data gathering, the closed world of casino redesign detects, constructs, and caters to specific collectives. Paying attention to these practices can diagnose larger concerns about data, privacy, consumer behavior and the control exercised by the corporations who own the data.

Similarly, Emmanuel Didier shifts our gaze to that of the police—specifically those in the Real Time Crime Center (RTCC) of the New York Police Department. NYC’s police have gained notoriety for their use of statistics, and in particular for “compstat” which now routinely figures as a kind of artificial detective in crime dramas like *The Wire*. Didier shows not only how the RTCC works with data as a live stream, but also how it serves to create a form of police protection more suitable for Wall Street than other New Yorkers. Like Desrosières, Didier shows how “data mining” serves certain

political purposes and not others.

Chris Csikszentmihályi steps back even further to look at how engineering education is related to the kinds of technologies and problem solving that exist today. Engineering was for most of the 20th century the province of the engineers on the inside of the universities, the defense industry or the government. But with the advent of the Internet, and especially of Free and Open Source software in the 1980s, that dominance has begun to wane—today there are collectives of amateur engineers growing everywhere, and not beholden to the demands of mainstream engineering. Csikszentmihályi shows some of what such alternative engineering collectives might achieve.

Finally, the very emblem of resistance to the creation of new collective kinds is anonymity. From the anonymous Federalist papers of an 18th century public sphere, to the presumption of anonymity in markets, to the anonymous subjects of propaganda, the un-named and un-nameable are powerful figures of critique and danger in nearly every figuration of a collective. Gabriella Coleman puts the contemporary hacker collective Anonymous on display—both to show how and where they operate, in the technically specific domain of the Internet Relay Chat network, but also to show us how her own involvement as an ethnographer (and not a journalist) buys her membership (or not) in this collective.

The collection of articles in this issue shows the depth and diversity of perspectives that can interrupt conventional accounts of the phenomena of crowds and clouds. There are (new?) collectives of people and (new?) collections of data about which we actually know very little, and there is too often a demand to speak in haste, to claim expertise on the basis of familiarity, and to rely too easily on concepts such as “society” or “community” that should also be placed in question. The race for novelty in world of information technology should be a clear occasion for pause in the world of thought; and so it is here...

CHRISTOPHER M. KELTY
MARCH 2012

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published as needed. This issue is set using mostly Christian Schwartz' Graphik and Dino dos Santos' Musee typefaces. Layout by Martin Hoyem/American Ethnography. The General Editors of Limn are Stephen J. Collier, Christopher M. Kelty, and Andrew Lakoff. Issue No. 2 Editors: Christopher M. Kelty, Lilly Irani, and Nick Seaver || This magazine Copyright © 2012 Christopher Kelty, Lilly Irani Nick Seaver and Martin Hoyem. All articles herein are Copyright © 2012 by their respective authors. This magazine may not be reproduced without permission, however the articles are available online at <http://limn.it/> and available for unrestricted use under a Creative Commons 3.0 unported License, <http://creativecommons.org/licenses/by-sa/3.0/> || Publication assistance provided by the Institute for Society and Genetics, University of California, Los Angeles. More at <http://limn.it/>

This issue of Limn features several illustrations by Ruben Hickman. Ruben has worked for years as a concept artist on motion pictures. He has also taught drawing and painting at USC and Art Center College of Design. His personal work explores shadowy sides of “Western Civilization.” To see more of it go to: <http://theoccident.blogspot.com/>



ZU DEN BLAUEN FLASCHEN: The scene portrayed in this painting is from Hof zur Blauen Flasche in Vienna, one of the first coffee houses in Europe when it was founded in 1686. ARTIST UNKNOWN, CIRCA 1900.

1700

A

A THE PEOPLE

The figure of The People is most clearly associated with Jean-Jacques Rousseau. Emerging in the age of Revolutions in response to new experiments with government, it figures the individual as a citizen bound by a contract with other citizens and through which a general will emerges. Rousseau's citizens are central to any story of democratic revolution, the rule of law or the cultivation of civic virtue, and they are concurrent with crucial innovations in the practical techniques of government—from the science of voting to the economic theories of the Physiocrats. The political tract, the assembly and the protest in the street are the techniques most dramatically pioneered in this era when the problem was, as Condorcet put it, to bring all of France into conversation with itself.

B THE PUBLIC (SPHERE)

In the Late 18th century, the public was a figure addressed in physical places like coffeehouses, and new media spaces such as Addison and Steele's 18th century periodical *The Spectator*. Most clearly tied to the salon, the *tischgesellschaft*, the broadsheet, and the pamphlet, the public turns individuals into a collective that pays attention, debates, argues and addresses each other, often anonymously. The Public was powerful because it represented legitimacy outside of authority, one which governments ignored at their peril. It was only as modern media grew into channels of money and power that the public sphere would become "public opinion" and the "re-feudalization" of the populace—as Habermas diagnosed it—would take place.

C THE POPULATION

Only in the early 19th century did the idea of the "population" as an entity with both structure and history emerge as an object of analysis in response to the hunger, disease and crowding of the Industrial Revolution. Most famously associated with Thomas Malthus' work *An Essay on the Principle of Population*, it was first and foremost a problem of governance: how to balance the uncontrollable geometric increase of the poor underclasses with the brute arithmetic facts of food production? Measuring the population would become a core obsession of the new science of statistics, the institution of the census, and the activities of public health reformers like Edwin Chadwick and criminal diagnosticians like normal curve inventor and astronomer Adolphe Quetelet.

D SOCIETY

Closely related to the concept of the population and arguably the most diffuse kind of collective, "society" emerges clearly as a real object of intervention only in the mid to late 19th century. In part, its recognizability is tied to the ill effects of the Industrial Revolution—worker accidents, effects of the poor laws, public health—rectified by new technique of social insurance and welfare. The "social" is clearly separate from (both inside and outside of) the nation or the citizen. In John Stuart Mill's famous analysis in *On Liberty*, social conformism is indicted as a tyranny at least as dangerous as the repressions of monarchies. It is in the rise of the anthropology and sociology—especially the works of Durkheim that the concept becomes a precise diagnostic of collective life.

E THE (ETHNIC) NATION

The rise of the nation-state is one of the most studied collective formations in history. Identified with the powerful mechanisms of patriotism, standardization and territorial military power, it has arguably been the most successful collective formation. Psychologically, nations tied ethnicity to moral duty; practically they incorporated people by unifying and standardizing languages and by taking advantage of the print, post and communication revolutions of the 19th century. Nations in their 19th century form, emerged in response to the revolutions and counter-revolutions of the period, and consolidated themselves through international economic institutions and military power. Nationalism would eventually become the pathology *par excellence* of the 20th century.

F THE PRIMITIVE COMMUNITY

In contrast to the nations, societies, the people or the population, the idea of "community" gains scientific salience with the rise of ethnology, archaeology, anthropology, and folklore in the mid-19th century. The distinction of Ferdinand Tönnies between *Gemeinschaft* and *Gesellschaft*, or that Henry Maine separating "status" and "contract" societies are among the most famous; primitive or natural communities were saturated with affect and sedimented in rigid class distinction as opposed to the societies and civilizations of Europe breaking free from tradition. Assimilating populations into the framework of nationality was a political concern at the same time that the "salvage" of primitive culture as a record of our past was in vogue among scientists.

1800

C

E



COMMUNE: Black Bear Ranch friends and family. PRESS PHOTO FOR THE MOVIE COMMUNE. PHOTO BY JOCK STURGES, 1980.



G CROWD
The figure of the crowd at the end of the late 19th century was a hybridization of certain aspects of modern society and the primitive community. Modern civilization with its urban density, rail transport and globalizing markets was combined with the discovery of the unconscious, and the concern about the primitive, bestial drives that remain locked inside modern men. Crowds represented the uncontrollable eruption of these atavisms, exacerbated by the density of people, the ease of communication and the fragility of psyches battered by modern society. Le Bon and Freud would both fasten on the crowd as figure of the unconscious, while sociologists like Georg Simmel and Gabriel Tarde would attempt to make sense of the figure of the stranger, or the “mimicry” that led to a mob.

H MASS SOCIETY
Propaganda, nationalism, the new broadcast medium of radio, and the success of market capitalism are inextricably tied in the notion of “mass society” that emerges in the early 20th century. Often most clearly associated with facism, it was also the core object of analysis of the early communications and public relations scholars. It was also the object of critique of the Frankfurt School philosophers Adorno and Horkheimer, the “distracted viewer” of Walter Benjamin, and later of Hannah Arendt as well. As with the crowd, the notion of mass society referred to a manipulable and vulnerable unconscious as an object of control, this time not as an uncontrolled horde, but as an object of propagandistic direction and influence.

I THE DEMOGRAPHIC
Segmentation, pie charts, graphs and maps, target marketing, focus groups, surveys and opinion polls. All these techniques emerged in as mass society came to be measured and represented in new ways. In economic terms the “demographic” implicitly invoked a segmented consumer market—an expansion of capitalist productivity and a mode of representing tastes and desires in manageable, marketable ways. In political terms it allowed the periodic and constant measurement of opinion that political scientists would make into the object of a new science of democracy. Vance Packard would indict the advertisers of the 1950s in *The Hidden Persuaders*, while C. Wright Mills warned of the effects on political life in *The Power Elite*.

J (SOCIAL) NETWORK
Befitting the integrated national collective crisscrossed by telecommunications wires, postal systems, roads and railways, the notion of a collective as a network became most attractive in the 1960s. Perhaps the most iconic representatives are Stanley Milgram’s “six degrees of separation” and Mark Granovetter’s “strength of weak ties.” The image of the network diagram representing the nodes and ties of a collective steadily grew into an object of both social and scientific fascination, promising (not for the first time) to give a precise mathematical definition to collective life.

K THE VOLUNTARISTIC COMMUNITY
Unlike the primitive community of the late 19th century, the community of the “communitarians” (in political theory) or the participatory democracy of the New Left and “New Communalists” (tuning in, turning on and dropping out), the 1960s and 1970s saw an efflorescence of forms and theories of intentional affiliation. Though the roots (especially in America) go back to the earliest socialist experiments, the new wave of community emphasized consciousness via psychotropics, the computer, and the commune; like the public sphere of yore, it experimented via the new media of zines, comics and video; from the primitive community of the 19th century ethnologists it took the spiritual and animistic as guides—but less for the coherence of a collective than for the expression of an authentic self.

L MULTICULTURALISM AND DIASPORA
The most recent transformations in notions of collective identity grew out of the critiques of nationalism, colonialism, mass society and public opinion, and in relation to the movements of liberation of the 1960s. Concepts of “hybrid identities,” “hyphenated subjects,” “diasporic communities,” and “multiculturalism” took shape in cultural and aesthetic movements, educational curricula reform, and new attempts at recognizing and incorporating diversity into collective life. Collective life under multiculturalism affirms a cultural ethnicity without a national or biological determinism—and as such associates itself with the “soft power” of culture, aesthetics, tourism and self-expression.