
Abstract

Because punctuated reality is episodic—waves come and go—the social structure of modern life is also episodic. Social groups form spontaneously and often without obvious reasons. Flashmobs ravage innocent bystanders, online raves spring up and just as quickly die out, protesters flair-up on Wall Street and then disappear. Why? These bursts occur because of the increasingly connected super hive we call the Internet. More importantly, they rise and fall because of how society is wired together. Ever-tightening self-organization and the resulting hub-like structure of society magnifies the impact and spreads these events like a wildfire. If you want to control the Internet animal, seek out and control the center.

2.1 Boulevardiering Is a Verb

Boulevardiering is one of the most endearing customs of urban Italians—parading up and down major thoroughfares of Rome and other Italian cities in one’s finest clothing. It is largely an extrovert’s sport played by social animals with an abundance of self-confidence. Boulevardiering regularly breaks out among the Neapolitan natives near the Castel Nuovo off Via Nuovo Marina Boulevard or most anywhere the stylishly dressed Italians happen to go in the cool evening after siesta and before dinner at 9 pm. Italians love to be spontaneous, but with style. They fondly call these spontaneous exhibitionists, “*Boulevard Animal*”—parading animals.

Boulevardiering has spread to other, more uptight countries like the USA. Southern Methodist University students in Dallas Texas have been doing it for years. Typically the SMU Mustangs parade around the campus prior to a big game against the rebel Black Bears of the University of Mississippi. It started in 2000 as

a kind of extemporaneous celebration in honor of the new Gerald J. Ford Stadium. SMU needed something bigger and better than the Black Bear tailgating parties in Mississippi. So they turned “boulevard” into a verb—an act of one-upmanship over the University of Mississippi. It must have worked, because SMU students have been boulevardiering ever since.

Boulevardiering holds no surprises. As the evening wind dies down and the Italian sky turns auburn, people turn out gradually at first, and then in droves. And when dinnertime arrives the crowd fades just as orderly and smoothly as it gathered. Whether parading around in one’s fashionable attire in Italy or baseball cap and war paint in Texas, the ritual is a predictable one—smooth and rhythmic as one would expect from a civilized and sophisticated people.

Boulevardiering is nothing at all like flashing.

2.2 Drop Out, Tune In, and Join a Flashmob

In contrast to boulevardiering, another kind of human animali spontaneously organize throughout the world for no apparent reason. Like gathering storm clouds that eventually turn into a torrent of rain, these animali unleash a torrent of abuse and destruction on the people and buildings around them. In some countries, like the USA, the assembly of youth looking for a thrill has become a major problem for law enforcement. These flashes of humanity are called *Flashmobs*. And, they can kill.

On September 29, 2002, in Milwaukee, Wisconsin, 16 young people suddenly appeared and beat a man to death after throwing an egg at him. On November 23, 2007 one hundred people ransacked a convenience store for no apparent reason. Seven people brutally attacked a man in a parking garage in Columbia, Missouri on June 6, 2009. One hundred and twenty juveniles tore up a Wal-Mart store in Cleveland Heights, Ohio. Teens accosted and assaulted innocent pedestrians in Silver Springs, Maryland, and 950 people went on a rampage in Philadelphia, the City of Brotherly Love, in 2010. During a short decade from 2002 to 2012, over 150 incidents were reported at <http://violentflashmobs.com>.

Wikipedia defines a *flashmob* as, “a group of people who assemble suddenly in a public place, perform an unusual and seemingly pointless act for a brief time, then disperse, often for the purposes of entertainment, satire, and artistic expression. Flashmobs are typically organized via telecommunications, social media, or viral emails”¹ Spontaneous email and message texting are favorites of the Internet cognoscenti. Unfortunately, many of these spontaneous combustions are neither entertaining, satirical or artistic. They are downright malicious.

Flashmob techniques have recently taken on deeper social and political meaning because of their power to organize and control Internet animali. For example, flashmob techniques have been used to foment revolutions

¹ <http://en.wikipedia.org/wiki/Flashmob>

(*Arab Spring*), instigate political change (*Occupy Wall Street*), and encourage social change (American Tea Party, Gay Rights Parades, and Raves). Flashmobs have become a tool for the prankster, marketer, and political activist. These planned and unplanned bursts appear to build up over time, reach a peak, and then die out, only to repeat at a later date. They are the 21st century equivalent of rebels without a cause.

What sets modern flashmobs apart from old-fashioned rebellion is the speed and agility made possible by the Internet. Mobsters can quickly organize and deploy a flashmob using *Facebook*, *Twitter*, cell phones, or other social media. These 21st century technologies extend the reach of the disrupters, crossing borders, time zones, cultures, and social classes. In the modern world, boulevardiers are being replaced by *Internet animal*—people glued to their mobile telephone or tablet, ready and willing to be deployed on an instant’s notice. But unlike peaceful boulevardiers, flashmobs can turn uncivilized.

The speed and reach of Internet technology make word-of-mouth, organized meetings, and planned social interactions obsolete. Today’s town hall meeting is an extreme event created, organized, and fed by *Internet animal* prowling the Internet. Mobs spontaneously appeared and instigated pillow fights with Toronto shoppers, attacked their math teacher in Irvington, New Jersey, and ran a truck over a 49-year old man in Jackson, Mississippi. Are these simply accidents, or carefully planned military-like exercises perpetrated by individuals exercising their powers of Internet persuasion?

2.3 Flashmobs Are Punctuated Events

Flashmobs and other technology-amplified movements among the animal fit the rules governing 21st century culture like an intellectual glove. First, these surges obey long-tailed distributions in size, time, and space, just like the waves lapping at my feet on Asilomar Beach. Flashmobs recorded from 2002–2010 in North America moved through space and time like a foraging animal or Manhattan shopper. They are *Levy flights*. See Fig. 2.1 through 2.3. Big events are self-similar to small events in size, elapsed time between events, and distance from the last event.

Figure 2.1 through 2.4 show *exceedence probability* plots of 150 flashmob incidents listed at <http://violentflashmobs.com/>. Recall that the exceedence probability is simply a probability curve where the vertical axis represents the likelihood of an incident *equal to or greater than the x-axis*. Exceedence probability curves measure the probability of an event exceeding some level, as indicated along the x-axis.

We use the exceedence probability to estimate the probability of flashmob events of a certain size, elapsed time between events, displacements, and future incidents in size, location, and time. From Fig. 2.1 you can see that most flashmobs are small, but a few rare ones are large. There is no such thing as an average

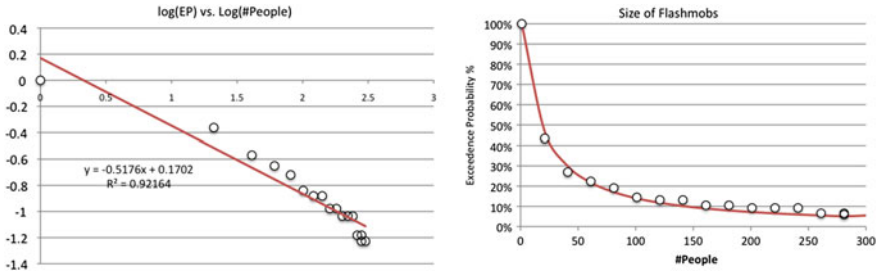


Fig. 2.1 Most flashmobs are *small*, but some are *large*. Size obeys a *long-tailed* exceedence probability distribution

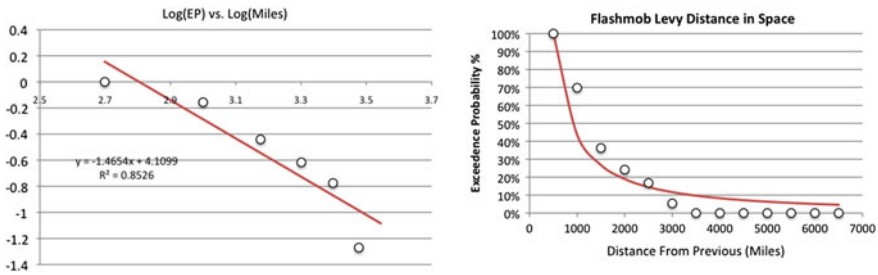


Fig. 2.2 Flashmobs are separated in space by distances that obey a *long-tailed* exceedence probability distribution

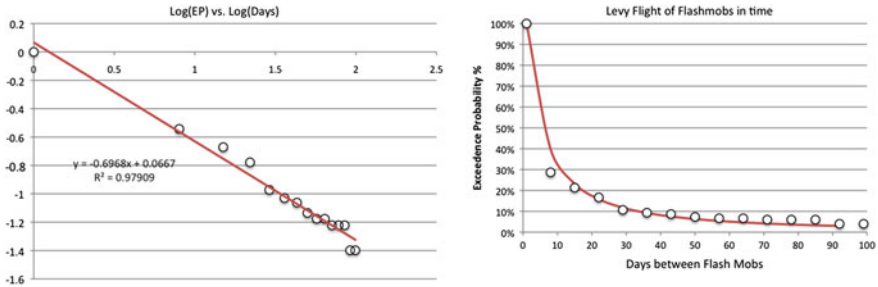


Fig. 2.3 Flashmobs also obey a *long-tailed* exceedence probability distribution in time: flashmobs are mostly clustered together in time, but a few are separated by long periods of quiet

uprising, rave, or flashmob incident. Instead, there are many insignificant uprisings, raves, and flashmobs happening all the time, but once in a while really significant flashes happen. Some flashmobs unleash such a torrent that they topple entire governments. These are the so-called *black swans* [Lewis 2011].

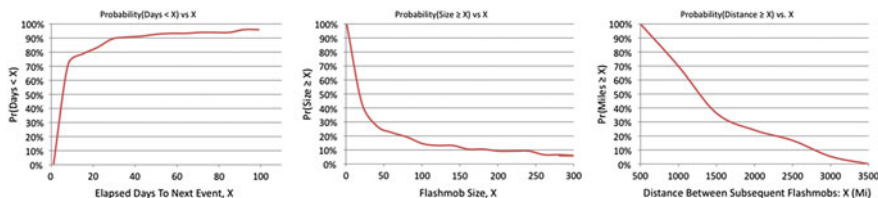


Fig. 2.4 Probabilities of a flashmob in the size-space-time continuum obey long-tailed distributions and follow Levy Flights

Flashmob distributions are also *fractals* because of their self-similarity. Big events mimic small events, and vice versa. A magnified slice of the curve in Fig. 2.1 is shaped just like the entire curve, signifying that large mobs are magnified small mobs. [We also say self-similarity is a form of *scalability*, because changing the scale of the plot does not change its shape]. The slope of the exceedence curve plotted on log-log paper equals the fractal dimension of the phenomenon. In fact the length of the curve's tail is quantified in terms of the slope or fractal dimension of the curve. A long-tailed exceedence curve says big events are rare, but still more likely to happen than expected. The tail is longer and fatter for low fractal dimensions, and shorter for high fractal dimensions.

Flashmobs follow *Levy flights* around town and sometimes across the globe. Spatial Levy flights mean that mobs occur on the surface of the earth separated by distances distributed as a long-tailed curve. Figure 2.2 illustrates this for the flashmobs recorded in North America. Flashmobs are more likely to recur near the same location as previous mobs, and less likely to occur far away. Occasionally, the mob jumps relatively long distances with probability determined by the tail end of the curve.

Due to the global Internet, these bursts of social mayhem are the byproduct of connected tremors propagating from one place to another along fault lines in society. Sometimes the connections are obvious, as they were with the Arab Spring revolution. The uprising in Tunisia and the tremors that followed in Egypt were connected through a variety of Internet-based social networks. Other times the connection is subtle, as was the case with the Occupy Wall Street movement in 2011. Flashmobs occur more often where there is a high concentration of self-organized activists on the verge of disruption. Sometimes this critical point is reached on its own, while other times it is contrived, as was the case with the Occupy Wall Street movement.

2.4 Occupy Wall Street

Kallie Lasn and Micah White run *Adbusters*—a magazine devoted to making money by bashing other people that make money. Lasn and White are avowed anti-consumerists, anti-capitalist, and anti-government anarchists. Lasn has been

quoted as predicting “a dark age” following the collapse of capitalism, because capitalists simply consume too much.² In fact, according to Lasn, “killing capitalism” is inevitable because there are too many people wasting too many limited resources for the consumer-obsessed system to remain viable. To hasten the end of modern society, Lasn and White have devoted their lives to launching discontent and watching how it spreads throughout society. Their brand of flashing is more traditional, but it uses the new technology of the Internet to spread the word.

Adbusters is a compelling read. The articles are well researched and well written. A 2012 article on the Internet culture boasted that the Internet would lead to, “a slow erosion of our humanness and our humanity”. In another article, an *Adbuster* writer ranted, “the relentless mass marketing of cool has tainted ... [our] behavior” [Schwartz 2011, p. 28]. Making money from criticizing capitalism is apparently quite profitable, because *Adbusters* has been around since 1989.

Adbusters is a slick publication. It has great graphics, thought-provoking articles, and a large following. In fact, the magazine is so persuasive that when Lasn called upon his 70,000 readers to protest Wall Street mischief in November 2011, thousands of people showed up. Lasn single-handedly sparked the *Occupy Wall Street* (OWS) movement, and almost as quickly lost control of it.

Lasn has the smarts to instigate a revolution. With a degree in mathematics and years of experience doing market research for the capitalist companies he now despises, he has the skill to “throw ideas into the culture that then have a life of their own” [Schwartz 2011, p. 30]. He treats ideas like a cold virus—when he sneezes his readers catch his cold. Lasn and White cooked up the idea of Occupy Wall Street in early July 2011. Then an email campaign followed an ad in *Adbusters*. Twitter.com and Reddit.com became infected, and the people behind OWS began their boulevardiering. Justine Tunney in Philadelphia put the notice on her RSS feed and registered OccupyWallStreet.org with the Internet’s Assigned Names authority, IANA.

Meanwhile, White contacted *New Yorkers Against Budget Cuts* and convinced them to join the boulevardiering anarchists. He went to work on fragmented groups of discontents like the one proposing a *Robin Hood Tax* on the richest 1 %, *Irish Hunger Strike* advocates, and people against the poor treatment of American Indians. Soon, it was the 1 % versus the 99 %. The contagion even jumped the Atlantic Ocean. David Graeber, a London-based anarchy theorist, added flames to the spreading bonfire. An over-the-hill activist from the 1960s, Tom Hayden, recommended that the movement remain ambiguous in its goals for the time being. Apparently, the best revolutionaries are the ones nobody can understand.

Soon, the OWS idea spread over the country like swarming locusts. The signature of the mounting online flashmob appeared as a radar blip on Facebook. Figure 2.5 plots the exceedence distribution of Facebook postings versus the number of likes from various cities in the USA during the build up in late 2011.³

² Schwartz (2011).

³ <http://www.collectivedisorder.com/occupytogether/latest>

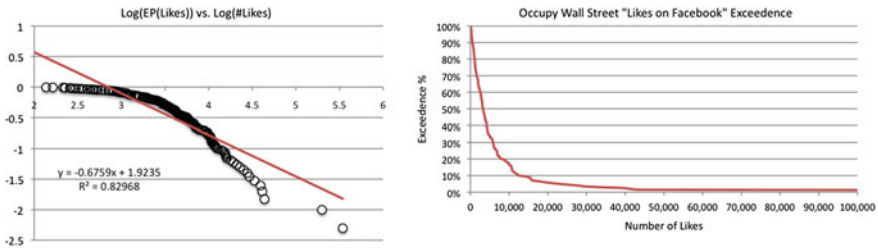


Fig. 2.5 Occupy Wall Street postings on Facebook ranged from a maximum in excess of 100,000 to a minimum of 93 during the period: October 5, 2011—November 29, 2011

And as expected, its exceedence probability curve is a long-tailed distribution, with an R^2 value of 82 %. It seems that discontented 99 %-ers behave a lot like the waves lapping the shore at Asilomar Beach. They left a trail of Levy Flight breadcrumbs on the Internet for us to study.

But then the OWS sunburst was over. Within a few months the world turned its attention to the Syrian civil war, the US Presidential elections, and the miserable state of the global economy. Like SARS forging a path out of China into nearby countries and then dying off in a matter of 6–8 months, the Adbuster's campaign no longer mattered much. A flash is simply that—a sudden burst followed by a relatively long pause. OWS became a slogan and nothing more. The Internet animali quietly turned their attention to other mobs.

Why do so many events in the 21st century unfold in such a similar manner? What is the nature of flashes? What is it about society that makes us act like mindless waves on a beach? Do flashmobs have structure? To find out, I built the following simulator, cleverly called, *Flashmob*. Flashmob simulates the behavior of people that are easily influenced by what they read on the Internet, see on TV and YouTube, and hear from friends and neighbors. Their motivations may come from someone else, but are they really under the control of flash-herders like Lasn and his Adbuster tribe? Or do *Internet Animali* have a mind of their own?

2.5 Internet Animali

Why do people boulevard? Why do they rave, flash, and incite? One way to answer this and related questions, is to simulate the very fabric of *social networks*—the invisible forces that hold people together or drive them apart. **FlashMob** is software that mimics the behavior of a rather mindless social network. It models the influence that members of the network have on one another. It is a simplification of reality, but a very interesting model nonetheless, because it shows that under certain conditions, flashmobs are predisposed to act like mindless boulevardiers. Mobs of long-tailed size emerge from randomness with little provocation and a lot of peer pressure. *Spontaneous order* emerges out of chaos.



Fig. 2.6 Actors John and Sally influence one another so they are connected by a social link. John currently sides with the *REDs* while Sally agrees with the *BLUEs*

Here is how **FlashMob** works. Each person in the simulation is represented inside of the computer program by a node or *actor*. Influence relationships between pairs of actors are represented by connections called *links*. A link between two actors represents a bi-directional influence. For example, a link between John and Sally represents John's influence on Sally and Sally's influence on John. See Fig. 2.6. Directly connected actors are called *neighbors* so only his or her neighbors influence an actor.

Now suppose each actor takes one of three possible *positions* on a topic or subject—RED, BLUE, or WHITE. If an actor agrees with the RED group, it is painted red; if he or she agrees with the BLUE group, he or she is painted BLUE; and if he or she has no opinion or position, the actor is painted WHITE. A position can be an opinion, belief, political affiliation, product endorsement, belief of a member of a sub-culture, etc.

Initially, one actor is BLUE, one is RED, and all others are WHITE (neutral). The initial actor's positions remain fixed throughout the simulation. We say they are *pinned*. Regardless of the opinion of their neighbors, pinned actors hold onto their position—either RED or BLUE. We are interested in the effect these stubborn actors have on the rest of the network. Can they persuade others to adopt their positions? Can one actor start a revolution?

The goal of the simulation is to determine the eventual outcome from spreading the pinned actor's influence to all other actors in the network through interactions with their neighbors. For example, friends on Facebook.com or tweets on Twitter.com exert an influence on each other through postings. Similarly, the opinions of consumers on Yelp.com influence the popularity and desirability of products and services. Do these influences spread to everyone on the network?

Neighbors influence actors but actors also have their own level of *conviction*—a number between zero and one—that determines how difficult it is to change their minds. A conviction of 1.0 means the actor never changes his or her position; zero means he or she is completely influenced by neighbors; and 1/2 means the actor sides with neighbors one-half of the time and ignores them the other half. Stronger conviction means it is more difficult to change actor positions through influence.

One actor is painted RED and another actor is painted BLUE, initially. Then the simulation performs a very simple rule over and over again until it is stopped. It paints each actor RED with probability $(1 - C)R/(R + B)$, where C is conviction, R is the number of links connecting the actor to a RED actor, and B is the number of links connecting the actor to a BLUE actor. For example, if conviction is zero,

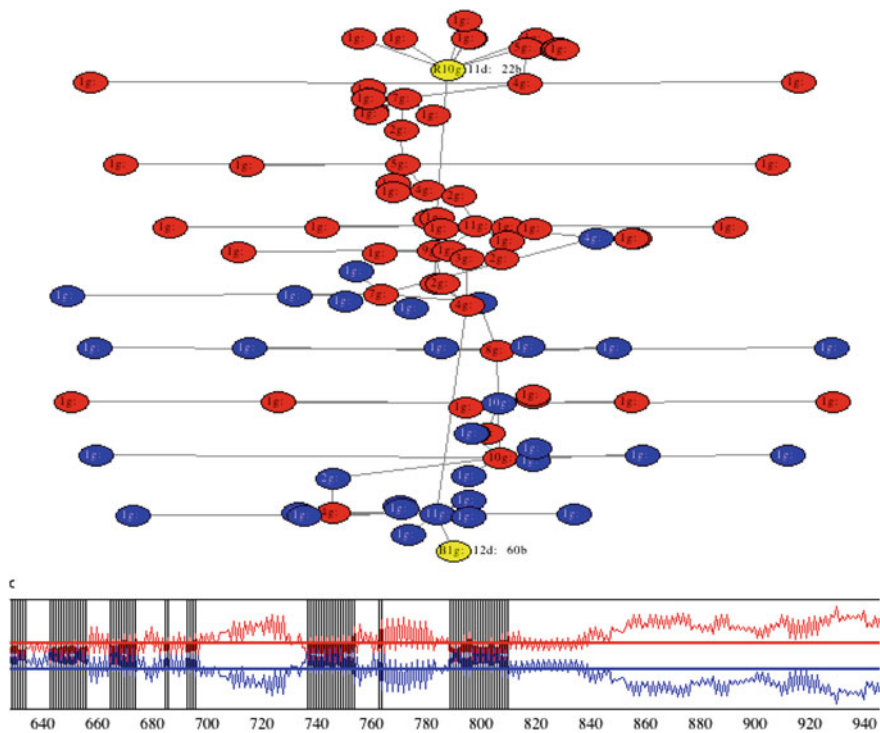


Fig. 2.7 A social network forms groups—mobs—around RED and BLUE positions. The strip chart at the bottom of the simulation display shows the change in mob size versus elapsed time. Vertical lines mark points where the sizes are equal or cross each other

and an actor has 3 RED neighbors and 4 BLUE neighbors, then the actor is painted RED with probability $3/7$. Otherwise, the actor is painted BLUE.

Starting with two pinned actors **FlashMob** determines the color of each actor as it steps through time. The number of RED actors oscillates, growing and shrinking somewhat chaotically and without an apparent direction. BLUE actors do the same. Once in awhile the number of RED (or BLUE) actors will surge—pull ahead of the opposition and dominate. **FlashMob** records the elapsed time between RED domination and BLUE domination. RED/BLUE actors dominate the social network when the largest connected sub-network of one color exceeds 50 % of all actors. This domination switches whenever the majority switches from RED to BLUE or BLUE to RED.

RED and BLUE contagions spread through the network like the plague, modifying actor positions according to their convictions and neighbor's positions. Figure 2.7 illustrates a stage in the propagation of RED and BLUE positions as the simulation steps through time. Figure 2.8 shows the distribution of size-of-largest-connected sub-network of RED and BLUE groups for a typical simulation run.

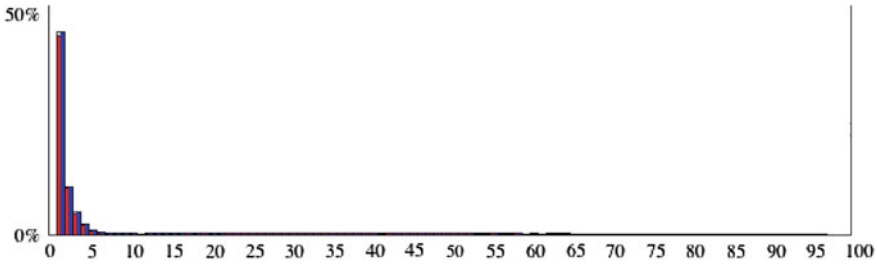


Fig. 2.8 Simulating the formation of flashmob spontaneously formed by listening to neighbors leads to a long-tailed size-distribution

Clearly, the long-tailed distribution of Fig. 2.8 is quite similar to the size-distribution of real flashmobs as shown in Fig. 2.1.

Flashmob illustrates a fundamental truth: social networks form spontaneously and self-organize without any help from outside. Order emerges out of disorder and then dissipates almost as quickly. This emergence is bottom-up, not top-down. That is, the order comes from local actions, rather than from a designated leader or group organizer. **Flashmob** organization is driven by conviction—or lack of it. Left to its own devices, social networks form and dissipate, automatically.

What else does **FlashMob** tell us? First, assuming actors lack conviction and are easily swayed by neighbors, the size of the largest group of RED or BLUE actors obeys a long-tailed distribution just like the real flashmobs analyzed in Fig. 2.1. The elapsed time between the formation of a RED and BLUE majority, or the reverse, obeys a Levy Flight very similar to the Levy Flight distribution shown in Fig. 2.3. At least with respect to size and elapsed time between RED/BLUE majorities, **FlashMob** replicates the behavior of real flashmobs observed in the wild. In other words, there seems to be no difference between the behavior of a mindless computer simulation and real humans forming real social networks around real issues. But, this result depends very much on where the first RED and BLUE actors are placed in the network.

Suppose the same social network is seeded with different initial RED and BLUE actors. In this scenario, the pinned RED actor is connected to twice as many neighbors as the pinned BLUE actor. In a real sense, the RED actor has more influence over the entire network simply because he or she is linked to more neighbors. This small advantage is critical, because it magnifies as RED's influence spreads through the entire network.

In this lop-sided case, the long-tailed size distribution dissolves because many more RED mobs form than BLUE mobs. RED becomes dominant. The domination of RED over BLUE becomes even more pronounced as conviction rises. In fact, the long-tailed distribution of mob size completely disappears and is replaced by two Normal distributions—one centered on the average RED mob size, and the other centered on the average BLUE mob size, see Fig. 2.9. Domination of one position over another dissipates flashmobs.

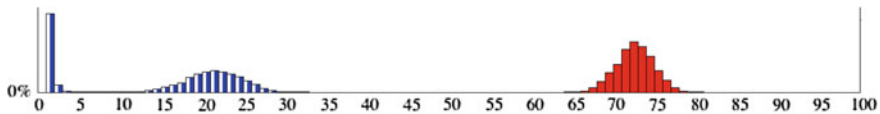


Fig. 2.9 Distribution of *RED* and *BLUE* mob sizes when the initial *RED* is connected to 8 neighbors and *BLUE* is connected to 4 neighbors, and conviction is $1/2$

The previous simulations were run with 3–4 links per actor, so they modeled a *sparse network*. [The average number of friends on *Facebook* is typically 130–150]. Now suppose the social network is *dense*, meaning that many neighbors influence a typical actor. In this scenario, the average number of links per node is 20. How do mobs form in a dense network? As it turns out, flashes disappear once again. The sizes of both *RED* and *BLUE* mobs obey Normal distributions centered on 50 % of the actors. Flashmob size is purely random and no pattern emerges. Flashing is limited when actors listen to too many neighbors. Nonetheless, the elapsed time between *RED* and *BLUE* majorities still obeys a long-tailed distribution.

2.6 Mob Power: The Hub

These simulated social networks lack one more property observed in real social networks: a *hub*. In almost all social networks there is one actor that has far more connections than the average. This highly connected actor is called a *hub*, for obvious reasons. The social network is no longer randomly connected. Instead, it has structure in the form of a few highly connected actors and many less connected actors. Lasn and White were hubs in the *Adbuster* network, because they were “connected” to 70,000 subscribers. Their influence far outweighed all other actors. What impact does a hub actor have on the rest?

Assuming no conviction and the number of neighbors of the pinned *RED* actor is twice that of the pinned *BLUE* actor, the size distribution of mobs is still long-tailed as before. But the tail of *RED* is much longer than *BLUE*. In fact, the size of the largest *BLUE* mob rarely exceeds 10 % of the population. The initial position of the pinned hub dominates the positions of nearly all actors. The effect on *RED* is to elongate its long-tailed distribution. The effect on *BLUE* is to radically shorten its tail. In other words, network structure introduces extreme groupings. Pinning a hub introduces polarization of the network. The hub exercises social control over the mob.

Power lies in self-organization of social networks. As a network formed by *RED* actors organizes, it gains more influence over the *BLUE* actors. The *RED* network becomes dominant whenever it can self-organize faster than the *BLUE* network. Self-organization can be measured in terms of a network property called the *spectral radius*. Therefore, power over the entire network rises with an increase in spectral radius. If the spectral radius of the *RED* network exceeds the spectral

radius of the BLUE network, RED will dominate BLUE. In other words, the rate of self-organization determines which position wins.

What do these simulations tell us about Internet animality? I summarize the results shown in Fig. 2.7 through 2.9:

1. Flashmob formation is a Levy Flight in size and elapsed time between switches in majority opinion when the social network is *sparse and conviction is low*. Low conviction accelerates the rate of self-organization. Large flashmobs quickly form when actors lacking conviction listen to a small number of strong influencers. On the contrary, large flashmobs are inhibited from forming when conviction is high or actors listen to more than a dozen neighbors. Too many influences attenuate flashmob intensity and retard the rate of self-organization.
2. A pinned RED actor dominates BLUE actors if its number of neighbors exceeds the number of neighbors of BLUE, and vice versa. If you want to steer mobs in one direction, start with the most connected actor. Revolutions are started and successfully completed by highly connected and strong actors simply because number of links equals influence. A small advantage in terms of connectivity accelerates the rate of self-organization.
3. Structured networks with a large pinned hub are dominated by the initial position of the hub. This structure introduces additional extremes—the tail of the hub distribution is longer, and the tail of the subordinate actor distribution is shorter. The larger the hub, the easier it is to control the network and the larger is the flashmob. A hub amplifies influence—a scale-free network amplifies influence of the hub even more.⁴ Self-organization—as measured by spectral radius—is enhanced by hub size.
4. Structured networks with large hubs change majorities more often when the pinned initial RED and BLUE actors have more links than when they have fewer links. Hub size introduces volatility. Conversely, fewer links means longer elapsed times between majority switching. Pinning highly connected actors introduces more volatility, and pinning slightly connected actors introduces stronger majorities. When conviction is low, flashmobs can be whipped back and forth by highly connected actors. Self-organization goes hand-in-hand with hub size, setting up competition between RED and BLUE when both networks contain large hubs.

Clearly these simulation results have important applications. Whether in advertising, marketing of web sites, promotion of political campaigns, or simply understanding the dynamics of socio-political movements around the globe, flashmob behavior modification is a matter of pulling the right levers. Mob formation has little to do with human nature and psychology, and much to do with conviction and the inclination of your neighbors. Power and influence is a mechanical property of boulevardiers, activists, and trendsetters. Persuasion can be had simply by shaping the topology of the network. Function follows form.

⁴ Recall: a *scale-free network* is one with a few large hubs and many actors with few connections.

2.7 Put Out the Fire

On May 25, 2011, Mongolian students marched in protest before a government building in Xilinhot, Inner Mongolia. Reports on the Internet of the fatal beating of a street vendor triggered a flashmob of hundreds of people in the southern China city of Guangzhou. In September 2011, riot police removed protesters from the entrance of a Solar panel manufacturer in Haining, Zhejiang province. The factory is a subsidiary of a New York-listed firm.

Thousands of outraged residents of Wukan, an urban village located in Guangdong province, held daily protests over the death of a local man held by police. The villagers were protesting the seizure of their land to make way for industrial development. They have complained of government land grabs for decades, but a massive real estate project announced in September led to an outpouring of pent up anger resulting in riots and clashes with police.

The number of Chinese “mass incidents” rose from 8,700 in 1993 to 74,000 in 2004, more than 90,000 in 2006, and then to 180,000 by 2010, according to the Chinese Police Academy and Sun Liping, a Tsinghua University sociologist.⁵ The proliferation of cell phones and social networks like Facebook and Twitter has exponentially increased the number reported. The minute a window is smashed, somebody shoots a video and posts it on a blog.

These flashes were sparked by claims of unpaid wages, taxes, lay offs, land seizures, factory closings, poor working conditions, environmental damages, corruption, misuse of funds, ethnic tensions, use of natural resources, forced immigration and police abuse. Some of them have been quite large and violent. However, most were too small to gain widespread notice. I haven’t done the math, but my guess is that these are long-tailed events.

China has long been associated with repression of its population, censorship, and dictatorial rule. So why the recent change? Why does China tolerate even the smallest uprising? Have the Chinese rulers gone soft?

2.8 Forest Fires

In my previous book, *Bak’s Sand Pile*, I showed how large forest fires are prevented by frequently setting small fires or purposely removing trees. When swatches of forest are removed from the stockpile of fuel, they form natural barriers to the uncontrolled spread of fire. In fact, modern day forest managers practice orderly deforestation as a means of reducing the size of wild fires. This is called *depercolation* in the scientific literature—tree growth is *percolation*, and tree removal is *depercolation*. Depercolation reduces self-organized criticality so that forest fires are less deadly.

⁵ <http://chinadigitaltimes.net/china/sun-liping/>

Does the same technique work for the Chinese government? By allowing a lot of relatively small protests (small fires), does China avoid the really big ones that could bring down the government (big fires)? Is there such a thing as “political depercolation”? This is left as an exercise for the reader.

What we know for sure is that if you want to stop a flashmob, you have to attack its hubs—the most highly linked actors. Flashmobs are long-tailed phenomenon and the larger the hub, the longer the tail. Quelling the activities of hubs shortens the tail. Completely eliminating the hub renders it almost insignificant. Similarly, social networks containing actors with a shared conviction also shortens the tail. It is very difficult to ignite flashes in a population of people with strong convictions. This is the key to governance in the 21st century where governments must walk a tightrope between anarchy and mob rule in the age of the global Internet.

But flashmob psychology and social network effects are just one tip of a much larger iceberg. To see the ice under the surface, we need to understand what ignites a flashmob. This requires an understanding of Sparks.

References

Lewis, Ted G., Bak's Sand Pile, AgilePress, 2011. 378 pp. <http://www.agilepress.com/index.html>
Schwartz, Mattathias, Pre-Occupied, The New Yorker, Nov. 28, 2011, pp. 28–35

Book of Extremes

Why the 21st Century Isn't Like the 20th Century

Lewis, T.G.

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