

Cogs in Collective Action: The 2022 Skytte Lecture

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Collective action can be motivated in many different ways. Here I point to a new and perhaps surprising one: by, in effect, telling people that the group is powerful and likely to achieve its goal, precisely because each of them is an inessential, interchangeable part in it. Given people's desire to be part (even if a superfluous part) of a winning group, that can be a powerful motivator for people to join in a collective action.


Consider this image (Figure 1). The year was 1819. The place was Manchester, in the north of England. The occasion was a mass rally urging the extension of the franchise. It was a large rally, with 60,000 to 80,000 people in attendance. That may not seem much by today's standards but it was huge at the time, fully a tenth of the population of Greater Manchester. The city fathers got spooked and called out the yeoman cavalry. The yeoman cavalry took fright and charged the crowd, trampling people under horses' hooves and slashing them with their sabers. Seventeen men, women, and children were killed; over five hundred were injured.

The newspapers immediately dubbed the episode the "Peterloo Massacre." "Peter" because it occurred on St. Peter's Field, "loo" as a reference to Waterloo where

Napoleon's imperial ambitions had been quashed a few years earlier. Whose Waterloo it was, however, was an open question. The city fathers thought, and hoped, that this was the end of the "extending the franchise" nonsense. Advocates of electoral reform, however, embraced the victims as martyrs and redoubled their efforts. Artists of all sorts rallied to the cause. Percy Bysshe Shelley (1819) wrote a poem memorializing the event, "The Masque of Anarchy," that is sometimes said to be the finest political poem in the English language (Holmes 1974, 532). In the crucial stanza, the masses are enjoined to

Rise like Lions after slumber
In unvanquishable number—
Shake your chains to earth like dew
Which in sleep had fallen on you—
Ye are many—they are few.

Those lines speak to the problem at the heart of this lecture. Just how do you get masses of people to rise up like lions? We know collective action is hugely important politically. It is the stuff of revolutions. It is how civil and political rights are won. It is key to campaigns against the extinction of species, not least our own. But how do you motivate people to take part in collective actions? Why should any of the little people in the picture come to the rally, knowing that whether the franchise is extended does not depend in the least on whether they themselves attend, and knowing that there is a real risk of being mown down by the yeoman cavalry if they do?

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The 2022 Johan Skytte Prize in Political Science lecture was delivered on September 30, 2022 and is published here by agreement between the Skytte Foundation and the American Political Science Association.

Free Riding and Selective Incentives: A False Start

The economists and political scientists following them think they know why it is hard to get people to engage in

doi:10.1017/S1537592723000968

December 2023 | Vol. 21/No. 4 1399

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Figure 1
The Peterloo Massacre, 1819



Source: British Museum 1871, 0812.5310.

collective actions. And, following on from this, they think they know how to accomplish this outcome.

The problem, as they see it, is one of free riding. If the collective action aims at a public good (one that would be available to everyone if it is available to anyone), and if participating in it would be costly, why pay for something when you can get it for free? (Olson 1965, chap. 1).

If that is the problem, then political economists propose “selective incentives” as a solution. That is to say, provide benefits that go to those who participate in the collective action, and to them alone (Olson 1965, chap. 1). Consider a trade union, for example. It is no good telling workers they should join the union because it negotiates higher wages for them; all workers in the firm will get those same higher wages, whether they are members of the union or not. To persuade people to join the union, it needs to provide them with some selective incentive that goes to members of the union and them alone, like a \$200 reduction in their annual life insurance premiums.

No doubt free riding is sometimes the problem and selective incentives are sometimes the solution—but not always. Let’s continue with the trade union example.

Suppose the union calls a strike and a striking worker would lose \$1,000 in wages every week that the strike continues. On the one hand, joining the union saves him \$200 a year in life insurance; on the other hand, joining its strike costs him \$1,000 a week in lost wages. On the political economist’s model of “selective incentives” as the basis of collective action, the former is supposed to incentivize the latter. But how on earth can it? It just does not compute. Free riding and selective incentives might provide a useful partial analysis of collective action, so far as they go—but they do not provide anything like a complete, perfectly general analysis.

The Curse of Inconsequentialism

There is in any case a more general, and more fundamental, problem in motivating participation in collective action—and understanding what it is leads to a novel way of understanding how that problem can be overcome and collective action can actually occur. That problem is “the curse of inconsequentialism.”

Think of it from the point of view of each of those little people in the picture of the Peterloo Massacre. Each of

them must know, in their heart of hearts, that whether the franchise gets extended will not depend on whether they themselves attend this rally. Even if they think it is tremendously important for the franchise to be extended, why should any of them bear the costs (such as the risk of being mown down by the yeoman cavalry) if they know, virtually for sure and certain, that their being there would not make any difference?

There are of course some familiar ways of evading the curse of inconsequentialism. Again, those solutions are good as far as they go, but they are not remotely complete answers to the challenge of motivating collective action.

The first familiar evasion appeals to irrationality (or “wishful thinking,” which amounts to the same thing [Elster 1989, 37–38]). Perhaps a person believes, against all the evidence, that his being there *will* make all the difference to the franchise being extended. That belief is just plain crazy, of course. But as the wit H. L. Mencken (1922) famously observed, “No one ever lost any money, or office, by underestimating the intelligence of the American public.” So we cannot dismiss the “crazy” explanation completely out of hand. Nevertheless, it is hard to believe that it explains all (or even very many) people’s participation in collective action.

A second familiar way of evading the curse of inconsequentialism appeals to identity politics. In effect, it offers an alternative account of “consequential for what?” according to which affirming one’s identity through one’s actions (rather than altering any larger political outcomes) is the consequence in view.

Think back to the 1956 boycott of buses in Montgomery, Alabama, during which Black residents refused to ride segregated city buses for over a year. Suppose you had stopped one of the Black people trudging down the hot and dusty road and asked why they were doing it. Imagine yourself saying, “Surely it cannot make any difference to the success of the desegregation campaign whether you yourself ride the bus.” And imagine your interlocutor replying, “No, I am under no illusion about that. It is just what a Black person does. When Dr. King calls on Blacks to boycott the buses, then as a Black man I boycott the buses.”

Clearly some cases of participation in collective action are like that. The Montgomery bus boycott was probably among them. But not all cases are like that. For a start, some (sometimes many) participants in collective actions cannot claim the requisite identity. To continue with the civil rights example, recall the three Freedom Riders murdered by the Ku Klux Klan in Mississippi in 1964: “It’s just what a Black man does” does not explain the participation of the two who were white New Yorkers. And even when people come to think of themselves as “the sort of people who stand up against that sort of thing,” that self-conception is often the consequence, rather than the cause, of their having decided to participate in the collective action in the first place. As I say, the “identity” explanation may be true of some, but not all, cases of participation in collective action.

A Cog Theory of Collective Action

I am going to offer a novel explanation of why people participate in collective action. The key to my explanation will be the very “inconsequentialism” that is ordinarily thought to put a curse on the possibility of motivating people to take part in collective action.

Begin by recalling why we ordinarily think of “inconsequentialism” as a barrier to collective action. Decades of survey research confirm that a person’s sense of “efficacy” correlates strongly with that person’s propensity to engage in collective action or to participate in politics more generally (Almond and Verba 1963, chap. 6; Campbell, Gurin, and Miller 1954, 187; Campbell et al. 1960, 103–5; Verba and Nie 1972, chap. 5). If you feel inefficacious—if you feel that you cannot make a difference—you will be less inclined to participate. That, as I say, is a familiar, well-established finding.

But that is just half of the “efficacy” story. It speaks only to “individual efficacy.” The other half of the story, which political scientists remember less well, has to do with “group efficacy.” The findings on that score are equally robust, however. The more likely you think a group is to make a difference, the more inclined you are to participate in that group (Bandura 2000).¹ Furthermore, that holds up even controlling for your own sense of personal, individual efficacy: it is not just that you think that your joining it will make all the difference to the group’s being efficacious; even bracketing that out, people are still more inclined to participate in a group the more efficacious they think the group is likely to be, independently of whether they themselves participate in it (Finkel and Muller 1998; Klandermans 1984, 592; Koch 1993; Zomeran, Saguy, and Schellhaas 2012, 621–23).

People Want to Be Associated with Winners

This is going to be the first plank of my alternative analysis of motivation for collective action. People like to be associated with winners. Do not just take the survey researchers’ word for it; think about experiences closer to home. Think, for example, about support for sporting teams. People like to back winners there all the more so. Statisticians report that a 10% drop in a baseball team’s winning percentage in one year leads to a drop of between 6 and 12% in attendance at their games the next year (Moskowitz and Wertheim 2011, 234–52).

Furthermore, the “backing winners” motivation is often appealed to by organizers of a more political sort of collective action. Here, for example, is what Martin Luther King, Jr. said to his followers during the campaign to desegregate Birmingham, Alabama, in 1963:

There are those who write history. There are those who make history. There are those who experience history. I don’t know how many of you would be able to write a history book. But you are certainly making history, and you are experiencing history.

And you will make it possible for the historians of the future to write a marvelous chapter (quoted in Branch 1988, 773).

What Dr. King was telling his followers is that they were backing a winner.

Finally, academic observers have remarked—albeit, typically, only in passing—upon “backing winners” and “making history” as motivations for participating in collective action.² Russell Hardin (1982, 108–9) remarks, for example, that “the civil rights movement at its height was an experience not to be missed,” in just the same fashion that a “twenty-year-old American male in 1943 might have joined the armed forces because going to war was likely to be the most important experience of his generation of males.” Even if none of them could remotely suppose that their own participation would make all the difference to the success of the venture, each of them took satisfaction from being part of a collective action that succeeded in making history. Brian Barry (1978, 30) observes, more generally, that “nobody likes to feel that he is wasting his time ... [M]ore enthusiasm ... is likely to be elicited [for a cause] if it looks as if it has a chance of succeeding than if it appears to be a forlorn hope.”

In short, the survey research, the sporting analogy, and comments from social movement leaders and academic observers all converge on the same conclusion: people like being associated with winners, independently of any thought that their being associated will help them to win. That, as I say, is the first plank of my argument.

Redundancy Increases Group Efficacy

The second plank of my argument is that a movement is more likely to win if it has plenty of superfluous, “redundant” members who can substitute for one another, if any one of them is taken out.³ Those are the “cogs” in the title of this lecture.⁴

In military affairs, we have long known the value of “interchangeable parts.”⁵ Go back to 1785, when Honoré Blanc first demonstrated the advantages of mass-produced muskets to a group of luminaries assembled at the Château de Vincennes. He took apart 50 of his muskets, mixed up the parts, and then reassembled 50 perfect muskets. The French army set him up with a workshop in the chateau to supply them with muskets. A recently arrived foreign observer, Ambassador Thomas Jefferson, who was also present at that demonstration, seized upon the idea and introduced it to the United States, later setting up federal armories at Springfield, Massachusetts, and Harper’s Ferry, in what is now West Virginia, to store standardized rifles of that sort (Roser 2015; Shapiro and Varian 1999, 207).⁶

For a more modern analogy, think of the importance of redundant, backup systems in the designs of ships, or aircraft, or spaceships. The safety and reliability of the craft are powerfully enhanced by having redundant, backup systems that can take over if the primary systems

should fail. In retrospect, you may call them “redundant,” if it turns out that they are not needed. But that is a judgment that you can only make after the fact. Ex ante, those backup systems are not at all redundant, they are absolutely essential. No one would set foot into a spaceship, or even an airplane, without them (Bendor 1985; Perrow 1984; Frederickson and LaPorte 2002).

Successful collective actions need redundant backups—cogs—in just the same way. They certainly need backup leaders, in case their existing leaders are struck down.⁷ Martin Luther King, Jr., for example, was always at pains to emphasize that he was dispensable and that the civil rights movement would go on without him, should he fall by the wayside. When his house was bombed in the course of the Montgomery bus boycott, Dr. King appeared on its porch to reassure the anxious crowd, saying: “I want it to be known the length and breadth of this land that if I am stopped, this movement will not stop. If I am stopped, our work will not stop” (quoted in Branch 1988, 166). Dr. King closed his remarks that night by saying, “[R]emember if anything happens to me, there will be others to take my place” (quoted in Azbell 1956).⁸

Leaders of social movements like Martin Luther King, Jr. are thus typically at great pains to emphasize that they are dispensable, that they are utterly replaceable cogs in the movement. But it is not just the leaders. Foot soldiers in collective actions are also often acutely sensitive to—and reassured and emboldened by—the fact that there are many others who could and would take their place should they fall. That redundancy adds strength to the movement and helps to ensure its success.

Here is one story along those lines from Howard Zinn’s ([1980] 2003, 454–55; see also Zinn 1964, 142–43) history of one prominent organization in the US civil rights movement, the Student Nonviolent Coordinating Committee (SNCC).

In Lee County, Georgia ... a black teenager named James Crawford joined SNCC and began taking black people to the county courthouse to vote. One day, bringing a woman there, he was approached by the deputy registrar. Another SNCC worker took notes of the conversation:

Registrar : What do you want?
 Crawford : I brought this lady down to register.
 Registrar : Why did you bring this lady down here?
 Crawford : Because she wants to be a first class citizen like y’all.
 Registrar : Who are you to bring people down to register?
 Crawford : It’s my job.
 Registrar : Suppose you get two bullets in your head right now?
 Crawford : I got to die anyhow.
 Registrar : If I don’t do it, I can get somebody else to do it.
 Crawford : [No reply]
 Registrar : Are you scared?
 Crawford : No.
 Registrar : Suppose somebody came in that door and shot you in the back of the head right now. What would you do?

Crawford: I wouldn't do nothing. If they shoot me in the back of the head there are people coming from all over the world.

Registrar: What people?

Crawford: The people I work for.

What James Crawford was saying was that there are lots of people who could replace *me*, and that makes *us* strong.

For the foot soldiers of collective action as well as the leaders, redundancy is thus greatly valued. It adds to the strength of the movement. It increases the chances of its succeeding. And that makes being involved in the movement more worthwhile, for that reason.

A Cog Theory of Collective Action

It is now time to nail together the two planks of my argument. The first plank says that people like to be associated with groups that are more likely to succeed. The second plank says that a group is more likely to succeed if it has plenty of redundant, interchangeable members who can substitute for one another. So “inconsequentialism” might be a “curse” from the point of view of individual efficacy, but it is a great boon from the point of view of group efficacy. And insofar as people do indeed like to be associated with winners—with groups that are more likely to be efficacious—their own inconsequentialism, by making the group more likely to succeed, is an inducement for them to participate in it.

That is a delicious irony, perhaps. Nevertheless, a deep awareness that each of them is utterly inconsequential can, in this roundabout way, help to motivate each of those little people in the picture of the Peterloo Massacre to engage in collective action.⁹

From a normative point of view, one may be somewhat hesitant to celebrate that finding. Of course, it is good that we have a way to motivate people to engage in morally worthy collective action. It is really important that they do so. Much that is morally very important could not happen without their doing so. But of course not all collective action is necessarily aimed at morally worthy goals. Some of it is aimed at morally reprehensible goals. Even collective action that is not deliberately aimed at morally odious goals could be open to moral criticism if it proceeds without regard to its consequences. Encouraging people to engage in collective action precisely because they are inconsequential might be seen as encouraging just such a moral failing.¹⁰

Those of a more normative bent might well seek ways of amending this account of collective action to make it morally more congenial.¹¹ But from an empirical point of view, the sad fact of the matter is that much collective action is indeed morally despicable. Social scientists should surely want to be able to explain that sort of collective action as well. From that point of view, it is thus actually an advantage of my cog theory of collective action that it explains why people participate in *all* sorts

of collective action, bad as well as good. Surely it is of social scientific value to explain people's collective moral failings, given how very many of them there are to be explained.

Acknowledgments

This is the text of the Johan Skytte Lecture presented at Uppsala University, September 30, 2022. It is the culmination of discussions over many years, now long ago, with Brian Barry, Russell Hardin, Mancur Olson, Art Stinchcombe, and Chuck Tilly. I am grateful for comments more recently from Gustaf Arrhenius, Krister Bykvist, Tim Campbell, Göran Duus-Otterström, Anders Herlitz, Karim Jebari, Avery Kolers, Jan Leighley, Marco Meyer, Margaret Moore, Kai Spiekermann, Ana Tanasoca, Sid Tarrow, and David Wiens.

Notes

- 1 See further Zomer, Postmes, and Spears (2008) for a meta-analysis of 182 studies and Stajkovic, Lee, and Nyberg (2009) for a meta-analysis of another 96.
- 2 The one place this phenomenon has received more sustained attention is the analysis of “bandwagon effects” in US presidential nominating campaigns (Bartels 1985, 1988; Brams 1978, chap. 2).
- 3 This fact is confirmed by computer modeling of network structures (Albert, Jeong, and Barabási 2000; Carley 2006).
- 4 Being utterly interchangeable and completely replaceable is the standard characterization of “cogs.” Noam Chomsky (2002, 89) for example complains that industrial capitalism turns both workers and consumers into “interchangeable cogs.” Jaspers (1951, 39, 50) before him had written: “The broad masses of the population could not exist today but for the titanic interlocking wheel-work of which each worker is one of the cogs The individual is no more than one instance among millions; why then should he think his doings of any importance?” A similar critique underlies Chateaubriand's ([1814] 2017) denunciation of Napoleon's treating his troops as “cannon fodder” and Falstaff's earlier reference to his troops as “food for powder” (Shakespeare [1598] 2015, act II, line 72).
- 5 As we have the value of “standardization” across technological realms, more generally. See, e.g., Besen and Farrell 1994; International Organization for Standardization 2018; Whitworth 1841.
- 6 Roser 2015; on the US uptake, see Shapiro and Varian 1999, 207. The same logic is at work, today, in the principles of “interoperability” across all the branches of any given country's armed services (Elwell 1970; United States Defense Standardization Program 2018) and across the various national components of NATO (2006) forces.

- 7 This is confirmed by case studies of movements as diverse as the African National Congress, FARC in Columbia, and the Tamil Tigers in Sri Lanka (Bakker, Raab, and Milward 2012; Bob and Nepstad 2007).
- 8 This is a theme to which he often returned. When a court injunction prevented him from marching with protestors in Albany, Georgia, Dr. King watched the protest from the sidelines, saying gleefully, “They can stop the leaders, but they can’t stop the people” (quoted in Branch 1988, 613). And in a prophetic speech the night before his assassination, Dr. King (1968) told his followers, “I’ve seen the Promised Land. I may not get there with you. But I want you to know tonight, that we, as a people, will get to the promised land!”
- 9 Writing about bureaucracies, James Coleman (1982, 26–27) remarks similarly on the dual face of cogdom: ensuring that workers there “can at any time be replaced” is “good for the smooth functioning of the organization,” even if at the same time “it takes away something of central importance to each of us: the sense of being *needed*.”
- 10 That impression may however be an illusion. In my cog theory of collective action, people are motivated to engage in it because their own individual inconsequentialism makes the collective action more likely to succeed; and it is that group-level consequentialism that motivates people to engage in the collective action. In my cog theory, people are thus not impervious to the consequences of the collective action but, instead, act with a view to precisely that.
- 11 One way would be by adding, either as a further (rather dubious) empirical postulate or as a (rather banal) normative constraint, the proposition that people do or should want to “back winners” if and only if it is morally desirable that they win.

References

- Albert, Réka, Hawoong Jeong, and Albert-László Barabási. 2000. “Error and Attack Tolerance of Complex Networks.” *Nature* 406(6794): 378–82. DOI: [10.1038/35019019](https://doi.org/10.1038/35019019).
- Almond, Gabriel A., and Sidney Verba. 1963. *The Civic Culture: Political Attitudes and Democracy in Five Nations*. Princeton: Princeton University Press.
- Azbell, Joe. 1956. “Blast Rocks Residence of Bus Boycott Leader.” *Montgomery Advertiser*, January 31. Reprinted in *Birth of a New Age, December 1955–December 1956*, eds. Clayborne Carson, Stewart Burns, Susan Carson, Dana Powell, and Peter Halloran. Vol. 3 of *The Papers of Martin Luther King, Jr.* Berkeley: University of California Press, 1997. <https://kinginstitute.stanford.edu/king-papers/documents/blast-rocks-residence-bus-boycott-leader-joe-azbell>. Accessed January 24, 2023.
- Bakker, René, Jörg Raab, and H. Brinton Milward. 2012. “A Preliminary Theory of Dark Network Resilience.” *Journal of Policy Analysis and Management* 31(1): 33–62. DOI: [10.1002/pam.20619](https://doi.org/10.1002/pam.20619).
- Bandura, Albert. 2000. “Exercise of Human Agency Through Collective Efficacy.” *Current Directions in Psychological Science* 9(3): 75–78. DOI: [10.1111/1467-8721.00064](https://doi.org/10.1111/1467-8721.00064).
- Barry, Brian. 1978. *Sociologists, Economists and Democracy*. Chicago: University of Chicago Press.
- Bartels, Larry M. 1985. “Expectations and Preferences in Presidential Nominating Campaigns.” *American Political Science Review* 79(3): 804–15. DOI: [10.2307/1956845](https://doi.org/10.2307/1956845).
- . 1988. *Presidential Primaries and the Dynamics of Public Choice*. Princeton: Princeton University Press.
- Bendor, Jonathan B. 1985. *Parallel Systems: Redundancy in Government*. Berkeley: University of California Press.
- Besen, Stanley M., and Joseph Farrell. 1994. “Choosing How to Compete: Strategies and Tactics in Standardization.” *Journal of Economic Perspectives* 8(2): 117–31. DOI: [10.1257/jep.8.2.117](https://doi.org/10.1257/jep.8.2.117).
- Bob, Clifford, and Sharon Erickson Nepstad. 2007. “Kill a Leader, Murder a Movement? Leadership and Assassination in Social Movements.” *American Behavioral Scientist* 50(10): 1370–94. DOI: [10.1177/0002764207300162](https://doi.org/10.1177/0002764207300162).
- Brams, Steven J. 1978. *The Presidential Election Game*. New Haven, CT: Yale University Press.
- Branch, Taylor. 1988. *Parting the Waters: America in the King Years 1954–63*. New York: Simon & Schuster.
- Campbell, Angus, Gerald Gurin, and Warren E. Miller. 1954. *The Voter Decides*. Evanston, IL: Row, Peterson.
- Campbell, Angus, Philip E. Converse, Warren E. Miller, and Donald E. Stokes. 1960. *The American Voter*. New York: Wiley.
- Carley, Kathleen M. 2006. “Destabilization of Covert Networks.” *Computational and Mathematical Organization Theory* 12: 51–66. DOI: [10.1007/s10588-006-7083-y](https://doi.org/10.1007/s10588-006-7083-y).
- Chateaubriand, François-René de. [1814] 2017. “De Bonaparte et des Bourbons.” San Francisco: The Wikimedia Foundation. https://fr.wikisource.org/wiki/De_Bonaparte_et_des_Bourbons. Accessed January 24, 2023.
- Chomsky, Noam. 2002. *Understanding Power*, eds. John Schoeffel and Peter R. Mitchell. New York: New Press.
- Coleman, James S. 1982. *The Asymmetric Society*. Syracuse, NY: Syracuse University Press.
- Elster, Jon. 1989. *Nuts and Bolts for the Social Sciences*. Cambridge: Cambridge University Press.
- Elwell, Richard A. 1970. *An Introduction to Defense Standardization*. Technical Report 71-28-QAO.

- Quality Assurance and Engineering Office, US Army Natick Laboratories, Natick, MA. <http://www.dtic.mil/dtic/tr/fulltext/u2/717559.pdf>. Accessed January 24, 2023.
- Finkel, Steven E., and Edward N. Muller. 1998. "Rational Choice and the Dynamics of Collective Political Action: Evaluating Alternative Models with Panel Data." *American Political Science Review* 92(1): 37–49. DOI: [10.2307/2585927](https://doi.org/10.2307/2585927).
- Frederickson, H. George, and Todd R. LaPorte. 2002. "Airport Security, High Reliability, and the Problem of Rationality." *Public Administration Review* 62(S1): 34–44. DOI: [10.1111/1540-6210.62.s1.7](https://doi.org/10.1111/1540-6210.62.s1.7).
- Hardin, Russell. 1982. *Collective Action*. Baltimore: Johns Hopkins University Press.
- Holmes, Richard. 1974. *Shelley: The Pursuit*. London: Weidenfeld and Nicolson.
- International Organization for Standardization. 2018. "About ISO." Geneva: International Organization for Standardization. <https://www.iso.org/about-us.html>. Accessed January 24, 2023.
- Jaspers, Karl. 1951. *Man in the Modern Age*, trans. Eden and Cedar Paul. London: Routledge & Kegan Paul.
- King, Martin Luther, Jr. 1968. "I've Been to the Mountaintop" (speech), April 3, Mason Temple (Church of God in Christ Headquarters), Memphis, TN. Transcript and audio in MP3 format, 43:07. <http://www.americanrhetoric.com/speeches/mlkivebeentothemountaintop.htm>. Accessed January 24, 2023.
- Klandermans, Bert. 1984. "Mobilization and Participation: Social-Psychological Expansions of Resource Mobilization Theory." *American Sociological Review* 49(5): 583–600. DOI: [10.2307/2095417](https://doi.org/10.2307/2095417).
- Koch, Jeffrey W. 1993. "Assessments of Group Influence, Subjective Political Competence, and Interest Group Membership." *Political Behavior* 15(4): 309–25. DOI: [10.1007/BF00992100](https://doi.org/10.1007/BF00992100).
- Mencken, H. L. 1922. "Vox Populi." Reprinted in *H. L. Mencken's Smart Set Criticism*, ed. William H. Nolte, pp. 121–30. Ithaca, NY: Cornell University Press, 1968.
- Moskowitz, Tobias J., and L. Jon Wertheim. 2011. *Scorecasting: The Hidden Influences Behind How Sports Are Played and Games Are Won*. New York: Crown Archetype.
- North Atlantic Treaty Organization. 2006. "Interoperability for Joint Operations." NATO Public Diplomacy Division Report BGR2-INTEROP-ENG-0706, NATO, Brussels. https://www.nato.int/nato_static_f2014/assets/pdf/pdf_publications/20120116_interoperability-en.pdf. Accessed March 5, 2023.
- Olson, Mancur, Jr. 1965. *The Logic of Collective Action*. Cambridge, MA: Harvard University Press.
- Perrow, Charles. 1984. *Normal Accidents: Living with High-Risk Technologies*. New York: Basic Books.
- Roser, Christoph. 2015. "230 Years of Interchangeable Parts—A Brief History." *All About Lean*, July 8. <https://www.allaboutlean.com/230-years-interchangeability>. Accessed January 24, 2023.
- Shakespeare, William. [1598] 2015. *Henry IV, Part I*. Washington, DC: Folger Shakespeare Library. <https://shakespeare.folger.edu/shakespeares-works/henry-iv-part-1>. Accessed January 24, 2023.
- Shapiro, Carl, and Hal R. Varian. 1999. *Information Rules: A Strategic Guide to the Network Economy*. Boston: Harvard Business School Press.
- Shelley, Percy Bysshe. 1819 (1991). "The Mask of Anarchy." Reprinted in *The Chatto Book of Dissent*, ed. Michael Rosen and David Widgery. London: Chatto & Windus, 20–28.
- Stajkovic, Alexander D., Dongseop Lee, and Anthony J. Nyberg. 2009. "Collective Efficacy, Group Potency, and Group Performance: Meta-Analyses of Their Relationships, and Test of a Mediation Model." *Journal of Applied Psychology* 94(3): 814–28. DOI: [10.1037/a0015659](https://doi.org/10.1037/a0015659).
- United States Defense Standardization Program. 2018. "About the DSP." *Fort Belvoir, VA: United States Defense Standardization Program*. <http://www.dsp.dla.mil>. Accessed January 24, 2023.
- Verba, Sidney, and Norman H. Nie. 1972. *Participation in America: Political Democracy and Social Equality*. New York: Harper and Row.
- Whitworth, Joseph. 1841. "A Paper on an Uniform System of Screw Threads." Chap. 2 in *Miscellaneous Papers on Mechanical Subjects*. London: Longman, Brown, Green, Longmans and Roberts, 1858. https://en.wikisource.org/wiki/Miscellaneous_Papers_on_Mechanical_Subjects/A_Paper_on_an_Uniform_System_of_Screw_Threads. Accessed January 24, 2023.
- Zinn, Howard. 1964. *SNCC: The New Abolitionists*. Boston: Beacon.
- . [1980] 2003. *A People's History of the United States: 1492–Present*, new ed. New York: HarperCollins.
- Zomeren, Martijn van, Tamar Saguy, and Fabian M. H. Schellhaas. 2012. "Believing in 'Making a Difference' to Collective Efforts: Participative Efficacy Beliefs as a Unique Predictor of Collective Action." *Group Processes and Intergroup Relations* 16(5): 618–34. DOI: [10.1177/1368430212467476](https://doi.org/10.1177/1368430212467476).
- Zomeren, Martijn van, Tom Postmes, and Russell Spears. 2008. "Toward an Integrative Social Identity Model of Collective Action: A Quantitative Research Synthesis of Three Socio-Psychological Perspectives." *Psychological Bulletin* 134(4): 504–35. DOI: [10.1037/0033-2909.134.4.504](https://doi.org/10.1037/0033-2909.134.4.504).