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Is a Management Revolution Possible?

Ross A. Jackson, Brian L. Heath

Department of Business & Economics, Wittenberg University, Springfield, OH, USA
Email: jacksonr@wittenberg.edu

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Abstract

Management, operating under capitalist ideology, enacts corporate policy. As traditionally defined, managers plan, organize, lead, and control organizational resources, applying them to maximize company profits and shareholder wealth in businesses or accomplish a defined mission and set of strategic goals in non-profits. Neither aim includes an explicit focus on enhancing worker solidarity, the collective improvement of the working conditions, or the existential well-being of workers. In short, management as currently practiced is reactionary as it supports the propagation of the dominant capitalist ideology and the maintenance of the socio-political *status quo*. Whereas this is certainly the way things are, it is unclear if this is the way things must be. Is a management revolution possible? An agent-based simulation model was built in RStudio to mimic managerial responses to different sources of socio-organizational influence. Triangular distributions were used to model each of the seven input variables. In each case, the modeling of the parameters was done to favor the maintenance of reactionary managers over the generation of revolutionary managers. The initial model position was based on a small proportion of revolutionary managers, ranging from zero to six percent of the total management population. The model included variables for peer influence, revolutionary solidarity, pressure from radicalized workers, capitalist pressure to conform, reactionary pressure to revert to the capitalist ideology, and the potential for identification as a revolutionary manager and subsequent removal from the system. An adaptive run control approach was used to ensure that the 95% confidence interval in the result was no wider than ±0.5%. The model produced more reactionary than revolutionary managers. However, research suggests that a majority is not necessarily for a successful revolution. The simulation results of this study suggest that management, under these modeling conditions, can become sufficiently radicalized to achieve the critical mass necessary for a successful management revolution. The implications of this study are relevant to scholars and practitioners interested in transformative management, as they reveal the latent capacity within existing managerial frameworks to move towards more progressive, revolutionary aims.

Keywords

Capitalism, Ideology, Reactionary, Revolutionary, Simulation, Solidarity

1. Introduction

Management today functions largely as a reactionary force in organizations, supporting the propagation of the dominant capitalist ideology and the maintenance of the socio-political *status quo* (Braverman, 1974; Burnham, 2021; Jackson & Heath, 2025b; Marcuse, 2013; Willmott, 1997). In terms of internal operations, organizations can be understood as sites of power, coercion, and subjugation (Fleming & Spicer, 2014; Jackson, 2022; Mintzberg, 1983). As previously explained, "work, and by extension all those who are engaged in its execution, will end up being either revolutionary or reactionary" (Jackson & Heath, 2025a, para. 1), and "if managers were the true leaders of workers they could…function as a driving force for revolutionary change rather than reactionary enforcers of capitalist ideology" (Jackson & Heath, 2025b: p. 2726). Moving from reactionary to revolutionary aims within organizations requires both an increase in management awareness and engagement in a revolutionary project with enhanced solidarity among workers. Neither will be easy to achieve. Management is incentivized to comply with organizational preferences and pursue individual advancement over collective improvement (Durand et al., 2019; Jackson & Heath, 2025b; Kim, 2025). Mobilizing the workforce is complicated further by differences in worker perceptions of power operating within organizations (Abou Elnaga & Imran, 2014; Jackson, 2025; Jackson et al., 2022), and risks associated with unionization (Braymen, 2024; Logan, 2021; Plata, 2025). Overcoming these constraints requires increased class consciousness for mobilization and action (Braverman, 1974; Debord, 2014; Meyer, 2008). Once class consciousness is formed, it can be directed to transcending the constraints of capitalist ideology (Engles, 2020).

The dominant ideology is the ideology of the dominant class (Althusser, 2014, 2020; Marx & Engles, 2023). As Althusser (2014) explained, the "dominant ideology = ideology of the dominant class" and the purpose of capitalist ideology was to "guarantee the conditions for the exploitation of the exploited classes by the dominant classes, above all the reproduction of the relations of production in which this exploitation takes place" (p. 93). Common aspects of the capitalist ideology include the role of meritocracy in success and advancement (Derber et al., 2015; Walo, 2023), the sovereignty of private property rights (Rossi & Argenton, 2021; Wisman, 2020), and that poverty results from individual failures rather than systemic inequalities (Harriss-White, 2006; Patnaik, 2012). Primarily, capitalist ideology focuses on the individual over the collective (Kennedy, 2017; Turner, 1988). Focusing on the individual, and making economic failure personal rather than systemic outcome, both constrain the formation of the class consciousness needed for worker solidarity and deflect attention away from the role capitalism

plays in subjugating and exploiting workers. This is facilitated and enhanced by the pro-business, anti-labor, framing of news adopted by corporate media (Kollmeyer, 2004; Martin, 2015). Under capitalist ideology, management enacts corporate policy to maximize profits for businesses or accomplish missions and goals for nonprofits (Friedman, 2007; Maier et al., 2016; Sanders & McClellan, 2014), and preclude the formation of worker solidarity focused on collective improvement. As explained by Althusser (2014), "capitalist relations of production are relations of capitalist exploitation" (p. 29). Those wanting to escape this subjugation can focus on either reform or revolution.

The question of revolution or reform was central to the work of Luxemburg (2024) and Lenin (2011, 2013). As indicated by Luxemburg, "reform and revolution are not different methods of historic development that can be picked out at pleasure…reform and revolution are different factors in the development of class society," in which every reform "is the product of a revolution" (p. 78). The essential thing to note is that real reform requires a revolution. An echo of this view can be found in Lenin when he noted reforms are "the cheapest and most advantageous concessions to make" (p. 62) for those in power, but "the fundamental economic interests of the proletariat can be satisfied only be a political revolution" (p. 47). Still, it would be prudent to pursue reform over revolution, if reform were effective. However, as Jackson and Heath (2025b) explained, "while proponents of stakeholder capitalism and co-determination models argue that these frameworks offer more inclusive and equitable approaches to corporate governance…such business reforms frequently fail to dismantle the entrenched structural and ideological barriers that perpetuate worker subjugation" (p. 2723). Those ideological barriers are consequential. Debord (2014) effectively linked ideology with revolution (Jackson & Heath, 2024). Capitalist ideology obfuscates the class struggle residing at its core. Althusser (2020) explained, "the revolutionary power of the masses comes precisely from the *class struggle*" (p. 82), and that "class struggle is not an individual struggle, but an *organized* mass struggle for the conquest and revolutionary transformation of state power and social relations" (*emphasis retained*, p. 86). To determine if it is possible for a management revolution to contribute to this class struggle, a simulation was needed.

Whereas simulations in general, and agent-based modeling more specifically, have been previously applied to aspects of business including operations (Aghababaei & Koliou, 2023; Yang et al., 2023), organizational behavior (Pires et al., 2024; Tang & Liu, 2023) and consumer behavior (Abbasi Siar et al., 2022; Wang et al., 2018), and to aspects of revolutions including civil unrest and protests (Adhikari et al., 2023; Dacrema & Benati, 2020), rebellion and insurgency (Oloba, 2020; van der Zwet et al., 2023), and regime change (Klein et al., 2019; Lemos, 2018), this approach has yet to be applied to understanding the propensity for a worker-focused, management revolution while operating under the dominant, capitalist ideology. Such an approach is beneficial as it enables the exploration of system dynamics under various model assumptions and operational conditions

(Schwaninger & Grösser, 2018; Sterman, 2018; Subramanian et al., 2018). Simulations are especially beneficial as they provide analytic insights when alternative methods are too costly, time-consuming, or would be unethical to enact (Gilbert et al., 2018; Lamé & Dixon-Woods, 2020). For this study, an agent-based simulation model was built in RStudio to determine if a management revolution is possible. Triangular distributions were used to model each of the seven input variables. Proxy parameters were identified and substantiated through research, and modeling interpretations of all parameters were made to favor the generation of reactionary over revolutionary managers.

Key aspects of the enactment and execution of management operating under the dominant, capitalist ideology have been presented, along with a rationale for a management revolution over reform. Elements of simulations and agent-based modeling were introduced. These aspects were developed more fully in the following method overview (Section 2). After which, the results were presented and interpretations offered (Section 3). Based on the simulation results, a discussion of implications was developed (Section 4), followed by a conclusion (Section 5).

2. Method

Simulations are computational models that abstract and simplify the operations of real-world systems (Chebotar et al., 2019; Law, 2022; Tulli, 2024), allowing researchers to control and manipulate variables to understand complex system outcomes (Jalali et al., 2019; Lukosch et al., 2018; Yin et al., 2021). Such models enable one to explore system dynamics under various model assumptions and operational conditions (Schwaninger & Grösser, 2018; Sterman, 2018; Subramanian et al., 2018), providing insight that is often unattainable through alternative approaches due to cost, time, or ethical considerations (Gilbert et al., 2018; Lamé & Dixon-Woods, 2020). Regarding the form of simulation used in this study, Epstein (1999) explained that agent-based modeling is, "a powerful tool in the analysis of spatially distributed systems of heterogeneous autonomous actors with bounded information," and that the approach is "well suited to the study of connectionist phenomena in social science" (p. 56). This study of the propensity of managers to adopt a reactionary or revolutionary ideological stance within organizations is situated in the domain of connectionist phenomena in social science, comprised of heterogeneous, autonomous actors.

It is important to note at the beginning that this simulation model was neither attempting to model what has happened historically, nor what has occurred recently, within organizations operating under capitalist ideology. Rather, this simulation model attempted to determine *if* a management revolution is possible, given reasonable assumptions related to anticipated levels of support and resistance. Key to that determination was the observation of whether the simulated proportion of radicalized managers exceeded a minimum critical mass threshold viewed as reasonably necessary to sustain a management revolution, if that were ever to become the aim of a dedicated, core subgroup of managers. The approach

taken holds implications for the determination of a reasonable critical mass threshold zone and for model validation. Each of these aspects was addressed more fully in this section. Prior to addressing those concerns, it is essential to understand the model in general terms and provide a detailed summary of the key inputs and parameters used.

This management radicalization simulation was built in RStudio using the *dplyr* (Wickham et al., 2023, version 1.1.4), and *triangle* packages (Carnell, 2022, version 1.0). The data visualizations for this study were developed using the *ggplot2* (Wickham et al., 2025, version 3.5.2) package. To facilitate transparency and replication of the model, the code used for the simulation is included in Appendix A, and the code for the data visualizations is included in Appendix B. In addition to the provided code, a user-friendly, input adjustable and editable, version of the simulation was built in Anthropic's AI *Claude*, and is available for free (https://tinyurl.com/mtyjz6xz). The developed simulation model contained seven key input parameters. The distribution selection and input parameters for each of those seven inputs are explained in detail following a brief, general summary of the input parameters and distribution selection.

The simulation model was based on seven key parameters: a) the initial proportion of revolutionary managers within an organization, b) the susceptibility of currently reactionary managers to becoming revolutionary due to peer influence (i.e., becoming radicalized based on peer interaction with revolutionary managers within the organization), c) the susceptibility of currently reactionary managers maintaining their reactionary commitment due to capitalist pressure from within the system (i.e., either from higher echelon executives within the organization, or from media, market dynamics, or the influence of the dominant social ideology), d) the susceptibility of currently reactionary managers becoming revolutionary due to pressure from workers (i.e., becoming radicalized based on solidarity with those from a lower echelon within the organization), e) internal revolutionary group solidarity boosting commitment to revolutionary praxis once a manager has become radicalized, f) reactionary pressure for a revolutionary manger to revert back to a reactionary manager, and g) the probability that a revolutionary manager is identified as being revolutionary by the elites of the system and subsequently removed from one's managerial position within organization. For each of the risk distributions, a triangular distribution was selected using research-based parameter ranges. For most, if not all, of the variables, the data would likely be more appropriately modeled using a uniform distribution, as there was little to suggest that any one value was more likely than another. However, triangular distributions were used to favor reactionary over revolutionary values. In terms of modeling, the most likely value for each triangular distribution was selected to favor reactionary over revolutionary outcomes. Given the intent of this simulation to determine if an effective management revolution is possible, it was considered appropriate to make the affirmative outcome more difficult to achieve, *ceteris paribus*. This will become clearer through the presentation of the key input variables.

The initial proportion of revolutionary managers was an initializing variable that had a positive effect on the number of revolutionary managers in the model. It was modeled using a triangular distribution with a minimum and most likely value of 0%, and a maximum value of 6%. This means that the most likely scenario is that an organization starts the simulation with zero revolutionary managers among its ranks, but it could contain up to 6%. As previously indicated, the distributions were modeled to favor reactionary over revolutionary outcomes. The minimum and most likely values of 0% reflect a starting position in which no managers hold revolutionary views. The maximum value of 6% was based on research conducted by the Pew Research Center. According to their research, 6% of U.S. adults say they view socialism very positively (Pew Research Center, 2022). This was considered a reasonable proxy for a maximum proportion of revolutionary managers, as individuals holding these positions come from the underlying population. However, due to selection biases in employment and advancement, it is possible that those in management positions do not reflect the same political allegiances as those of the underlying population (Amos et al., 2021; Viinikainen et al., 2020). In general, it is reasonable to assume that those holding such positions tend to be more conservative (i.e., reactionary) than the underlying population (Fos et al., 2022; Hersh & Shah, 2025). However, given that this value is being used to substantiate the maximum value possible within the simulation, these concerns, while acknowledged, are not considered limiting.

The peer influence variable promoted conversion to revolutionary management through peer pressure. The Asch (1951, 1955) conformity studies explored "the conditions of independence and submission to group pressure" (1951, p. 177). In his earlier work, Asch (1951) found "that a disturbance of the unanimity of the majority markedly increased the independence of the critical subjects. The frequency of pro-majority errors dropped to 10.4 percent of the total number of estimates in variation" (p. 186). One might infer that having a person bolster one's stake in an unpopular position will result in the person holding firm to what one thinks 89.6% of the time (100% − 10.4% = 89.6%). In a subsequent study, Asch (1955) found that "the presence of a supporting partner depleted the majority of much of its power. Its pressure on the dissenting individual was reduced to one forth" (p. 34). The results of Asch have been largely replicated (Franzen & Mader, 2023) or partially replicated (Mori & Arai, 2010) in subsequent studies. So, the presence of a similarly minded individual in this case would allow the individual to hold firm with an unpopular opinion 75% of the time (100% − 25% = 75%). Using the information from the Asch (1951, 1955) conformity studies, peer influence was modeled with a triangular distribution with a minimum and most likely value of 75%, and a maximum value of 89%.

The capitalist pressure variable captures systemic pressure under the dominant capitalist ideology and promotes reversion to reactionary management. The lasting effects of exposure to propaganda are pronounced. Research conducted by Edelson et al. (2011) on "socially induced memory errors" found that "partici-

pants exhibited a strong tendency to conform to erroneous recollections of the group, producing both long-lasting and temporary errors, even when their initial memory was strong and accurate" (p. 108). They found that participants conformed to the majority opinion 68.3% of the time and that even after social influence was removed, participants maintained erroneous answers 40.8% of the time. Using this research as the foundation for parameter selection, the input variable for the pressure to conform to the dominant capitalist ideology was modeled using a triangular distribution with a minimum value of 40%, and a maximum and most likely value of 70%.

The radicalized worker pressure variable captured subordinate pressure and promoted conversion to revolutionary management from below. Research from DeVore et al. (2021) found that "86% of employees feel people at their workplace are not heard fairly or equally" (p. 4). Based on that value, it was assumed that the maximum efficacy of radicalized worker pressure on management was 14% (100% − 86% = 14%). This variable had the weakest level of influence. A triangular distribution with a minimum and most likely value of 0% and a maximum value of 14% was used.

Research by Keenan et al. (2022) reported a link between higher levels of employee belonging and a 50% decrease in employee turnover. According to research by Pierce (2025), the average turnover rate is between 12% and 20%. So, if there is a 50% reduction to a 12% to 20% turnover rate, this amounts to an improvement of between 6% and 10% in retention. Since this is a variable that supports revolutionary management, the 6% value was treated as the minimum and most likely value, and the 10% was treated as the maximum value. The solidary-enhancing group cohesion variable promotes conversion and stability within revolutionary manager agents. A triangular distribution was used with a minimum and most likely value of 6% and a maximum value of 10%.

The reactionary pressure represented ideological drag and promoted a reversion to reactionary management under the capitalist ideology. This input was modeled as having a minimum value of 0% and a maximum and most likely value of 20%. The closest analogue to reverting to a previously held ideology was found to be the proportion of people who held a religious belief, disaffiliated with that faith, and then subsequently returned after a period. Research by Cranney et al. (2024) placed the reversion rate between 17.4% to 27%. For this study, these values were rounded up to between 18% for the minimum value and 30% for the maximum and most likely values, since that treatment favored reactionary over revolutionary management.

The last input variable was the detection and removal of revolutionary managers from the system, with their subsequent replacement with a new reactionary manager that could turn out to be either revolutionary or reactionary in subsequent time steps. This was a suppression variable that removed revolutionaries from the system. The ability to do this was constrained by an organization's ability to identify a manager as a revolutionary rather than one conforming to the desired

reactionary ideology. Research from Dyck et al. (2024) found that "a substantial amount of corporate fraud remains undetected" (p. 755). And that detection rate ranged between 29% and 52%. In the context of this study, from the view of the organizational elites and capitalists, revolutionary management could be considered a form of corporate fraud, and its identification rates might conform to those of other forms of organizational fraud. Based on this interpretation, and rounding the values up to benefit reactionary over revolutionary management, the identification and removal of revolutionary managers' distribution was modeled as having a triangular distribution with a minimum value of 30% and a maximum and most likely value of 55%.

Given the details of these seven simulation input variables, it is useful to place them into a table to summarize the parameters and facilitate a comparative analysis. That information is contained in Table 1.

Table 1. Simulation input parameters summary.

Variable Title	Min-Max; **Most Likely** Values	Role Type	Revolutionary Polarity
initial_revolutionaries	0%-6%; **0%**	Initialization	*NA*
peer_influence	75%-89%; **75%**	Peer Pressure	+
capitalist_pressure	40%-70%; **70%**	Systemic Pressure	-
radicalized_worker_pressure	0%-14%; **0%**	Lower Pressure	+
solidarity	6%-10%; **6%**	Peer Cohesion	+
reactionary_pressure	18%-30%; **30%**	Ideological Drag	-
removal_probability	30%-55%; **55%**	Suppression	-

As indicated by the summary information contained in Table 1, after the number of initial revolutionaries was set in the simulation model, there was an equal number of positive variables (i.e., variables increasing the likelihood of a manager transitioning to the revolutionary state), and negative variables (i.e., variables increasing the likelihood of a manager conforming to the capitalist ideology, or reactionaries). The positive variables were *peer_influence*, *radicalized_worker_pressure*, and *solidarity*. The negative variables were *capitalist_pressure*, *reactionary_pressure*, and *removal_probability*. In terms of ranges and most-likely values, most of the variables can be seen to dramatically favor reactionary over revolutionary outcomes. Two of the variables, *initial_revoluionaries* and *radicalized_worker_pressure* had most-likely values of 0%. The only value that seemed questionable, in a relative sense, was that the most-likely *peer_influence* value (75%) was slightly higher than the *capitalist_pressure* value (70%). Given the rationales behind the input selections, these values were used in the model. However, this is likely the easiest point to critique. The input values were determined to be substantiated, balanced, and reasonable.

Agent radicalization scores were initialized by a random selection process within the simulation. The initialized agent radicalization score was selected from the defined triangular distribution with a most-likely value of 0% and a maximum

value of 6%. At each time-step update, the agent radicalization score interacted mathematically with the parameters of the other simulation variables exerting either positive or negative pressure on the agent radicalization score, where peer influence, radicalized worker pressure, and solidarity exerted positive pressure, and capitalist pressure, reactionary pressure, and removal probability exerted negative pressure. A manager's ideological state was updated through a probabilistic decision process driven by social and structural pressures combined with one's individual radicalization level. In the case of a reactionary manager, the combined pressure to become revolutionary was calculated as the sum of weighted influences: radicalized worker pressure, solidarity, and peer influence, each multiplied by the proportion of revolutionary peers. This aggregate pressure was then added to the manager's individual radicalization score to form a total revolutionary propensity value. A uniform random number between 0 and 1 was generated, and if that random number was less than the total propensity value, the manager switched to a revolutionary ideology; otherwise, the manager remained reactionary. Conversely, a revolutionary manager faced a probability of reverting to reactionary based on the sum of reactionary and capitalist pressures, scaled by one minus their radicalization score. If a generated random number fell below this reversion chance, the manager reverted; if not, the manager maintained a revolutionary stance. This simulated framework modeled ideological shifts as stochastic outcomes resulting from the interplay of peer effects, systemic pressures, and intrinsic radicalization. The proportion of revolutionary managers was then compared to the minimum critical mass threshold zone to determine if a management revolution is possible.

The minimum critical mass zone for management revolution was established based on research on socio-political revolutions. The work of Chenoweth and Stephen (2011) suggested that nonviolent movements with active participation from at least 3.5% of the population were consistently successful. However, research from Dacrema (2020) looking at protests in Arab countries found cases with participation rates as high as 18.4% that did not achieve their revolutionary aims. This suggests that 3.5% might function as a lower threshold value, but that the upper threshold would need to be a value exceeding 18.4%. Research from Centola et al. (2018) found that, "minority groups can initiate social change dynamics in the emergence of new social conventions" (p. 1116), and that "the critical mass prediction is not exact" but ranges from 20% to 30%. Based on these findings, the minimum critical mass zone for a successful management revolution was bounded between 3.5% and 30%. Whereas the critical-mass range (3.5% to 30%) used in this simulation is relatively wide, there is empirical evidence to support its underlying reasonableness if not its general robustness. The work of Chenoweth and Stephan, previously referenced, was based on their extensive, Nonviolent and Violent Campaigns and Outcomes (NAVCO) data set, which consists of "323 violent and nonviolent resistance campaigns between 1900 and 2006" (p. 6). Given the robustness of their findings, and the near, order of magnitude range from that

value, the minimum critical mass zone of this study is considered at least plausible.

The agent-based simulation model ran in chunks of 10 simulations, aiming to reach a high degree of precision (±0.5%) in estimating the percentage of revolutionary managers at the end of the simulation (i.e., *step* = 50). The model required a minimum of 30 runs to ensure a sufficient sample size was achieved to establish that the variability estimates were meaningful. A maximum of 1,000 runs was set as a safety cap to prevent the simulation from running indefinitely if convergence to the desired confidence interval width failed to be achieved. Given the nature of the model and the contestability of model validation more generally (Heath & Jackson, 2013), no model validation beyond face validity was conducted. Whereas comparing model output consistency with a single historical case does not validate the model, it does, however, bolster the face validity of the simulation beyond expert judgement. Research by Chenoweth and Stephen (2011) found that the nonviolent campaign of the Philippine People Power Revolution, which occurred between 1983 and 1986, had an estimated level of participation of about 2,000,000 people (which accounted for about 4.2% of the population at that time). The case of the Philippine People Power Revolution suggests that a successful, nonviolent revolution can occur within the critical-mass range used within this model, and as such, provides a brief, case-based validation of the model.

The simulation was allowed to progress for 50 time-steps. Time steps have no inherent temporal meaning (Siegfried et al., 2009). During a time step, all agents updated their ideology based on pressures, peer influence, and their own radicalization level. Revolutionary agents could be removed and replaced with new reactionary managers. And the current proportions of reactionary and revolutionary managers were recorded. A value of 50 time-steps could indicate an interval of 50 seconds, minutes, hours, days, or years. In the real-world, the temporal meaning of a "time-step" is ambiguous, contestable, and consequential. Different mappings of a time-step (e.g., days, weeks, months) would almost assuredly influence the practical interpretation of the findings. The central question regarding the temporal meaning of a time-step, is how long it takes for an individual to be open to redefining one's ideological commitments. At the individual level, this is idiosyncratic. Collectively, a period of days or weeks, is likely too short. Some research suggests that if people become open to reassessing their previously held positions, they do so after a couple of weeks or months (Festinger et al., 2008). Months starts to approximate a reasonable time-step for ideological shifts. If the interpretation of time-step extends to years, a period of 50 time-steps exceeds that of an entire career or perhaps a lifetime. Such an interpretation mitigates against revolutions. For these reasons, in practical terms, months appear to be the minimum, reasonable and practicable time-step duration. Consequently, a time-step in this simulation model could loosely be interpreted as being equivalent to a period of about a month, with 50 time-steps taking a little over four years. Placing the simulated time-steps into time is potentially beneficial for context, but unnecessary for the operation of the simulation model.

The method described the nature of simulation models, the intent of this study, the RStudio packages used, the rationale behind the input parameters, the functioning of the management ideology determinations, the minimum critical mass zone for successful management revolutions, and the operation parameters of the simulation. Based on the understanding of the simulation model, it is now possible to turn to the results of this study.

3. Simulation Results

The results of this simulation examining management ideology and revolutionary potential were assessed in three distinct parts. The first part was focused on the results covering simulation convergence to the desired confidence interval. The second aspect analyzed covered the comparative proportional analysis of reactionary to revolutionary management agents. The last aspect analyzed compared the simulated proportion of management agents holding a revolutionary ideology to the minimum critical mass threshold considered necessary for a successful revolution. Collectively, these results established the statistical significance of the simulated results and provided a basis for determining if a management revolution is possible.

The results of this simulation model converged to the 95% confidence interval target width of ±0.05%, after 810 iterations. The incremental conversion to the target value based on simulation runs is presented as **Figure 1**.

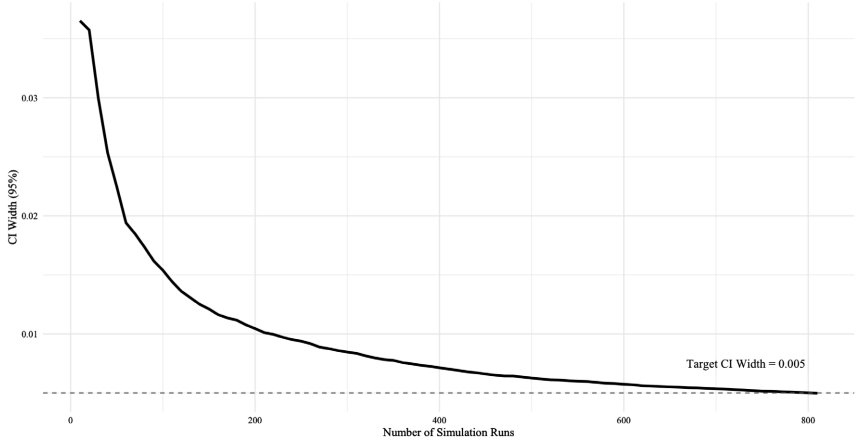

Figure 1. Convergence to 95% confidence interval target width of ±0.05%.

As indicated in **Figure 1**, the confidence interval width of this simulation decreased significantly as the number of iterations increased. This result was determined to be consistent with established simulation theory (Hoad et al., 2010; Law, 2024). The model was set to terminate iterating after the 95% confidence interval width target value of ±0.05% was achieved. As previously indicated, that level of precision occurred after 810 simulation iterations. Achieving the target value provided a statistically reliable estimate of the output variable (Flegal & Gong, 2015; Silva & Zhuang, 2022), which in the context of this study was the proportion of

managers holding reactionary or revolutionary ideologies, which are presented in Table 2.

Table 2. Steady-state management ideology results.

Management Ideology	Minimum	Mean	Maximum	Standard Deviation
Reactionary	46%	68%	86%	7.24%
Revolutionary	14%	32%	54%	7.24%

As indicated in Table 2, 68% (*SD* = 7.24%) of the managers were found to hold a reactionary ideology whereas 32% (*SD* = 7.24%) held a revolutionary ideology. Because the model forced the management ideology into two oppositional categories, reactionary or revolutionary, it was expected that the summation of simulated mean would be 100%. This expectation was met. It should be noted that within this model, the *SD* values for reactionary and revolutionary managers were the same (7.24%). The fact that these values were the same was not unexpected since reactionary and revolutionary managers, as modeled in this simulation, were perfectly negatively correlated with each other (Aitchison, 1982; Chayes, 1960). Consequently, given the inherent linearity between these two elements, the calculated *SD* values should be the same, which they are in this case. The simulated results across the 50-step simulation are portrayed graphically in Figure 2.

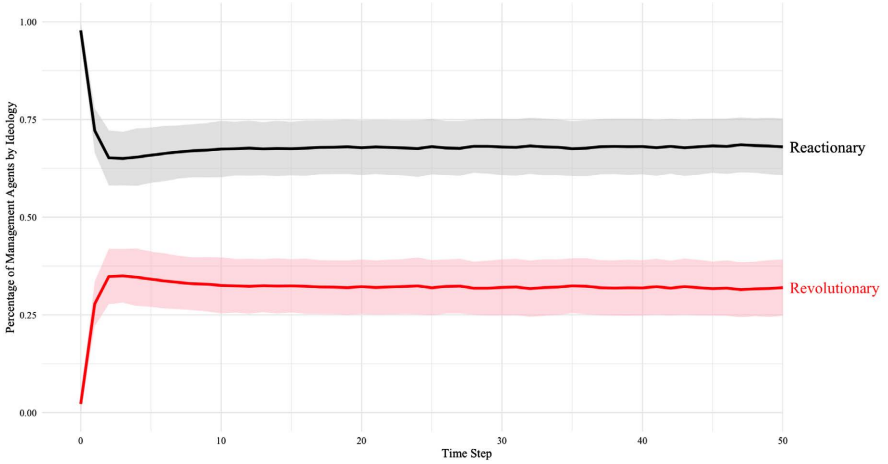

Figure 2. Management ideology assessment. (Mean ± SD)

The simulated results in Figure 2 show that once the initial simulation position was randomly established, the proportion of revolutionary managers increased to its maximum mean value of ~35%, whereas the proportion of reactionary managers decreased to its minimum mean value of ~65%. The model results stabilized around time-step 10, exhibiting its stead-state, mean values of 68% reactionary and 32% revolutionary managers, as reported in Table 2. Over the simulation run, the minimum value for revolutionary managers was 14%, at the point when the maximum value for reactionary managers was 86%. Again, due to the nature of

the proportional allocation, the average values sum to 100%, and the offsetting minimum and maximum values also sum to 100%. Based on these simulated results, it was possible to answer the central question of this research, as to whether a management revolution is possible. To do this, one is required to narrow one's focus to the simulation results for revolutionary managers and compare those values to the minimum critical mass threshold values considered necessary for a successful management revolution. That assessment is presented in Figure 3.

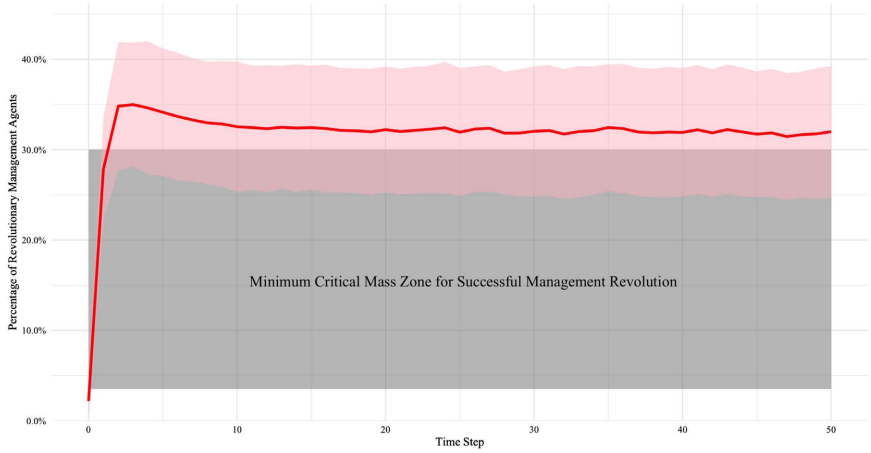

Figure 3. Revolutionary critical mass assessment. (Mean ± SD)

As described in the method section (Section 2), the minimum critical mass zone for successful management revolution extended from a lower threshold value of 3.5% to an upper threshold value of 30%. That area was denoted with a gray rectangle in Figure 3. The steady state, mean value for revolutionary managers (32%), and much of the uncertainty range exceeded the upper threshold value, suggesting that a successful management revolution is possible. However, there was a degree of overlap between the lower uncertainty range associated with revolutionary managers (denoted by pink shading) and the upper portion of the minimum critical mass zone for a successful management revolution (denoted by gray shading), suggesting that the chances for success are, at best, slightly ambiguous. If an actual attempt at a management revolution tended toward the lower end of solidarity, and the threshold required for success was more exacting than normal, the attempted revolution might be thwarted.

Given the nature of the simulation inputs, a case could be made that the use of uniform distributions would have been more appropriate than triangular distributions, as there was little, or no, *a priori* reason to assume a given value from among the identified ranges was any more likely than another. However, the decision was made to skew all the distributions toward selecting reactionary over revolutionary outcomes to make hitting the required critical mass as difficult as possible, under the modeling assumptions. A sensitivity analysis was conducted using uniform distributions to compare those results with those generated using triangular distributions. The results are presented in Table 3.

Table 3. Triangular uniform distribution sensitivity on revolutionary managers.

Distribution Type	Minimum	Mean	Maximum	Standard Deviation
Triangular	14%	32%	54%	7.24%
Uniform	17%	37%	61%	8.01%

As indicated in Table 2, when the triangular distribution was used, 32% (*SD = 7.24%)* of the managers were found to hold a revolutionary ideology whereas 37% (*SD = 8.01%)* held a revolutionary ideology when the uniform distribution was used. These values are generally consistent with each other and conform to the expectation that the values generated using the triangular distributions are more disfavorable to the creation of revolutionary managers. The results of this sensitivity analysis are suggestive that the model results are neither artefacts nor unduly optimistic toward revolutionary outcomes.

The simulated results suggest that the model was able to generate statistically significant results at the desired level of precision. Those results suggest that reactionary managers (M = 68%) always exceed revolutionary managers (M = 32%) on average, with only the most extreme simulation results indicating a revolutionary management proportion of more than 50%. With such a level, it was considered possible for that level of revolutionary managers to succeed in a management revolution. Implications of these results, as well as limitations of this study, require further development and examination. An exploration of the major elements of concern is presented as a discussion (Section 4).

4. Discussion

The results of this study suggest that a management revolution is possible. However, getting to that conclusion, through the building of this simulation, required overcoming challenges both in terms of model development and results interpretation. That issues along these lines existed was not unique to this study, as simulated studies are constrained due to the inherent limitations of simplifying assumptions, data quality, and human bias in modeling (Robinson & Brooks, 2024; White et al., 2024; Williams et al., 2022). Whereas it is important to acknowledge the general limitations of simulations, there is benefit too from examining the specific limitations of any given simulation study. This discussion focused on two types of issues confronted in the development of this study: a) simulative, and b) ideological. The simulative aspects discussed were related to the modeling parameters used in the simulation model and the hypothetical nature of its focus. The ideological aspect discussed was focused on the lack of content associated with the management revolution. Discussing these aspects of the simulation and its results and implications acknowledges its limitations and points to potential future research.

To start, whereas a rationale was provided for each of the parameter values used in this simulation, all the modeling parameters were ultimately proxies. This is not an uncommon practice. As indicated by Stahlecker and Trenkler (1993), "ap-

plied work…frequently faces the problem of measuring unobservable or latent variables by proxies" (p. 707). The use of proxy parameters for variable modeling can potentially limit both model accuracy and the generalizability of the simulated results (Kallus et al., 2022; Seltzer, 2021). One central concern associated with the use of proxy parameters in this study was that it induced measurement error (Giannetti, 2021; Lang & Pearson-Merkowitz, 2022). Because the proxy parameters may only partially reflect the actual parameters of interest, the use of proxies could lead to inaccurate conclusions. Relatedly, there is the concern of weak correlation (Krasker & Pratt, 1986; Lunsford, 2015), if the proxy parameters used for variable modeling are only weakly related to the actual parameters of the variables of interest, the simulation may detect relationships that aren't truly present, or miss real relationships that are. In terms of how the use of proxy parameters limits the generalizability of the simulation results, it is essential to acknowledge that the proxy parameters likely have different levels of relevance across populations and time (Luijken et al., 2019). Due to cultural variation, the application potential of proxy parameters can vary widely contextually, culturally, and temporally. Whereas the results of this study suggested that a management revolution is possible, theoretically, any attempt at an actual revolution should be based on a detailed analysis of the specific situation being confronted. As Lenin (2013) explained, "when you undertake to solve a concrete organisational problem surely you must take time and circumstance into consideration" (p. 136).

The simulation modeled a hypothetical future scenario in which a relatively small cadre of radicalized managers ($M = 32\%$) attempt a management revolution against the dominant capitalist ideology operating within organizations and society. Whereas there is some minority support for socialism within the society (Pew Research Center, 2022), such support in the abstract does not necessarily translate into galvanized, revolutionary action within organizations. The model implicitly presupposed that *something* has sparked revolutionary interest within organizations. Research suggests that many people are dissatisfied with at least certain aspects of work. In fact, research conducted by the Pew Research Center (2024) found that "40% of workers express dissatisfaction with the amount of flexibility they have to work remotely" and 80% indicated that "their pay hasn't kept up with increases in cost of living." Research from Gallup, found that "employee engagement in the U.S. fell to its lowest level in a decade in 2024, with only 31% of employees engaged" (Harter, 2025). Whereas it is certainly the case that many are dissatisfied with their work, and that some view socialism as a viable alternative to the dominant, capitalist ideology operating socially, politically, and organizationally, it is a significant leap to conclude that such discontent will move to revolutionary fervor. A gap exists between thought and action (Moder, 2021; Verma, 2025). For those interested in enhancing worker solidarity and directing general discontentment toward specific, revolutionary aims, this gap will need to be bridged. The results of the simulation suggest that *if* such a focus emerged, dynamics within the system could reasonably coalesce in such a way that a critical

mass of revolutionary managers could be achieved.

Lastly, the simulation results indicated that a unified minority of radicalized managers could achieve the theorized critical mass needed to effectively achieve revolution against reactionary forces operating under the dominant capitalist ideology. As modeled in the simulation, there was no specific content associated with that revolution. Whereas anarchy can potentially be about nothing other than nihilism (Franks & Wilson, 2018; Johnston, 1900), revolutions are about *something* (Brinton, 1938; Skocpol, 1979). While perhaps too reductionist, in broad strokes one could claim that the American Revolution was about colonial independence from British rule, the French Revolution was about dismantling the monarchy, aristocracy, and inequality, the Haitian Revolution was about ending slavery and French-colonial rule, and the Cuban Revolution was about removing U.S.-backed dictator Fulgencio Batista and establishing a socialist state. Galvanizing active revolutionary resistance requires an aim beyond simply venting one's frustration (Tilly, 1978). This simulation was not focused on defining the aims of a management revolution, apart from it simply offering a worker-focused alternative to the situation produced under capitalist ideology. Again, those interested in changing the management praxis and rebalancing power between labor and capital will need to define the revolutionary aims. When that is done, it will help bridge the gap between discontent and action mentioned previously.

The limitations of this simulation study can be discussed in terms of simulative and ideological concerns. Due to the lack of available data related to organizational revolutions, the modeling parameters used in the simulation model were constrained to proxy inputs. Additionally, the simulation was hypothetical in focus, if something has triggered a desire to pursue revolutionary action over discontented acceptance of the *status quo*. Ideologically, the simulated revolution lacked content beyond a vague desire for enhanced worker solidarity and liberation from capitalist exploitation. To advance this project, future research should aim to gather empirical data that can reduce reliance on proxy parameters and improve modeling accuracy, and explore through interviews and participatory research methods, what concrete revolutionary goals workers and managers might envision. Bridging the gap between discontent and solidarity requires more than dissatisfaction; it requires direction, clarity, and shared vision. A management revolution is possible, but it will never happen without these things.

5. Conclusion

Simulations are not reality. Even as simplified representations, simulations can still produce results that are suggestive as to what is likely and what is possible. The results of this simulation of management ideology suggest that it is highly unlikely that *most* managers will ever become revolutionary while operating under the dominant capitalist ideology. At no point in the simulation did the average proportion of revolutionary managers exceed that of reactionary managers. The steady state was achieved at a point where 68% of the management agents oper-

ated as reactionaries and 32% as revolutionaries. However, revolutions do not require a majority to be successful. A galvanized minority can transform reality. If the critical mass required for a successful revolution is somewhere between 3.5% and 30%, then this is achievable, even under socio-politico-organizational conditions that are antagonistic to that aim. A management revolution *is* possible. Time will tell if it is forthcoming.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Abbasi Siar, S., Keramati, M. A., & Motadel, M. R. (2022). Emergence of Consumer Impulse Buying Behavior with Agent-Based Modeling Approach. *Journal of Applied Research on Industrial Engineering, 9,* 203-230. https://doi.org/10.22105/jarie.2021.287633.1329

Abou Elnaga, A., & Imran, A. (2014). The Impact of Employee Empowerment on Job Satisfaction Theoretical Study. *American Journal of Research Communication, 2,* 13-26.

Adhikari, A., Soh, L., Joshi, D., Samal, A., & Werum, R. (2023). Agent Based Modeling of the Spread of Social Unrest Using Infectious Disease Models. *ACM Transactions on Spatial Algorithms and Systems, 9,* 1-31. https://doi.org/10.1145/3587463

Aghababaei, M., & Koliou, M. (2023). Community Resilience Assessment via Agent-Based Modeling Approach. *Computer-Aided Civil and Infrastructure Engineering, 38,* 920-939. https://doi.org/10.1111/mice.12916

Aitchison, J. (1982). The Statistical Analysis of Compositional Data. *Journal of the Royal Statistical Society Series B: Statistical Methodology, 44,* 139-160. https://doi.org/10.1111/j.2517-6161.1982.tb01195.x

Althusser, L. (2014). *On the Reproduction of Capitalism: Ideology and Ideological State Apparatuses*. Verso Books.

Althusser, L. (2020). *On Ideology*. Verso Books.

Amos, A. J., Lee, K., Sen Gupta, T., & Malau-Aduli, B. S. (2021). Systematic Review of Specialist Selection Methods with Implications for Diversity in the Medical Workforce. *BMC Medical Education, 21,* Article No. 448. https://doi.org/10.1186/s12909-021-02685-w

Asch, S. E. (1951). Effects of Group Pressure upon the Modification and Distortion of Judgments. In H. Guetzkow (Ed.), *Groups, Leadership, and Men; Research in Human Relations* (pp. 177-190). Carnegie Press.

Asch, S. E. (1955). Opinions and Social Pressure. *Scientific American, 193,* 31-35. https://doi.org/10.1038/scientificamerican1155-31

Braverman, H. (1974). Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century. *Monthly Review, 26,* 1. https://doi.org/10.14452/mr-026-03-1974-07_1

Braymen, S. D. (2024). *Starbucks Workers United and the Future of American Labor Activism*. https://digitalcommons.spu.edu/honorsprojects/224

Brinton, C. (1938). *The Anatomy of Revolution*. Norton.

Burnham, J. (2021). *The Managerial Revolution: What Is Happening in the World*. Lume Books.

Carnell, R. (2022). *Triangle: Distribution Functions and Parameter Estimates for the Tri-*

angle Distribution (Version 1.0) [Computer Software]. https://doi.org/10.32614/CRAN.package.triangle

Centola, D., Becker, J., Brackbill, D., & Baronchelli, A. (2018). Experimental Evidence for Tipping Points in Social Convention. *Science, 360,* 1116-1119. https://doi.org/10.1126/science.aas8827

Chayes, F. (1960). On Correlation between Variables of Constant Sum. *Journal of Geophysical Research, 65,* 4185-4193. https://doi.org/10.1029/jz065i012p04185

Chebotar, Y., Handa, A., Makoviychuk, V., Macklin, M., Issac, J., Ratliff, N. et al. (2019). Closing the Sim-to-Real Loop: Adapting Simulation Randomization with Real World Experience. In *2019 International Conference on Robotics and Automation (ICRA)* (pp. 8973-8979). IEEE. https://doi.org/10.1109/icra.2019.8793789

Chenoweth, E., & Stephan, M. (2011). *Why Civil Resistance Works: The Strategic Logic of Nonviolent Conflict*. Columbia University Press.

Cranney, S., Dyer, J., Hardy, S., Lambert, P., & Marks, L. (2024). *The Tides of Religion: Leaving, Staying, and Returning to Faith*. Wheatley Institute. https://wheatley.byu.edu/tides

Dacrema, E. (2020). *The Long-Term Revolution: Protest Participation in the Arab World from 2011 to 2019*. Italian Institute for International Political Studies. https://www.ispionline.it/en/publication/long-term-revolution-protest-participation-arab-world-2011-2019-24895?fbclid=IwAR1Y1QqOma8mA6_CjbDIQ2oSBcUXuS0-zXOhR4DCRFT3kBo9Hpd85F2s4hs

Dacrema, E., & Benati, S. (2020). The Mechanics of Contentious Politics: An Agent-Based Modeling Approach. *The Journal of Mathematical Sociology, 44,* 163-198. https://doi.org/10.1080/0022250x.2020.1753187

Debord, G. (2014). *The Society of the Spectacle* (K. Knabb, Trans.). Bureau of Public Secrets (1967).

Derber, C., Schor, J. B., Collins, C., Hoxie, J., Magrass, Y., & Piketty, T. (2015). The Death of Meritocracy. In *Disinherited Majority* (pp. 69-77). Routledge.

DeVore, J., Gouthro, D., & Mullen, C. (2021). *The Heard and the Heard-Nots: Who Feels Heard in the Workplace—And Who Doesn't*? Workforce Institute@ UKG. https://www.ukg.com/resources/white-paper/heard-and-heard-nots

Durand, R., Hawn, O., & Ioannou, I. (2019). Willing and Able: A General Model of Organizational Responses to Normative Pressures. *Academy of Management Review, 44,* 299-320. https://doi.org/10.5465/amr.2016.0107

Dyck, A., Morse, A., & Zingales, L. (2024). How Pervasive Is Corporate Fraud? *Review of Accounting Studies, 29,* 736-769. https://doi.org/10.1007/s11142-022-09738-5

Edelson, M., Sharot, T., Dolan, R. J., & Dudai, Y. (2011). Following the Crowd: Brain Substrates of Long-Term Memory Conformity. *Science, 333,* 108-111. https://doi.org/10.1126/science.1203557

Engles, F. (2020). *Socialism: Utopian and Scientific. The Leftist Public Domain Project*.

Epstein, J. M. (1999). Agent-Based Computational Models and Generative Social Science. *Complexity, 4,* 41-60. https://doi.org/10.1002/(sici)1099-0526(199905/06)4:5<41::aid-cplx9>3.3.co;2-6

Festinger, L., Riecken, H. W., & Schachter, S. (2008). *When Prophecy Fails*. Pinter & Martin Publishers.

Flegal, J. M., & Gong, L. (2015). Relative Fixed-Width Stopping Rules for Markov Chain Monte Carlo Simulations. *Statistica Sinica, 25,* 655-675.

https://doi.org/10.48550/arXiv.1303.0238

Fleming, P., & Spicer, A. (2014). Power in Management and Organization Science. *Academy of Management Annals, 8,* 237-298. https://doi.org/10.5465/19416520.2014.875671

Fos, V., Kempf, E., & Tsoutsoura, M. (2022). *The Political Polarization of Corporate America (No. w30183)*. National Bureau of Economic Research. https://doi.org/10.3386/w30183

Franks, B., & Wilson, M. (2018). Anarchism and Moral Philosophy. In N. J. Jun (Ed.), *Brill's Companion to Anarchism and Philosophy* (pp. 171-195). Brill.

Franzen, A., & Mader, S. (2023). The Power of Social Influence: A Replication and Extension of the Asch Experiment. *PLOS ONE, 18,* e0294325. https://doi.org/10.1371/journal.pone.0294325

Friedman, M. (2007). The Social Responsibility of Business Is to Increase Its Profits. In W. C. Zimmerli, M. Holzinger, & K. Richter (Eds.), *Corporate Ethics and Corporate Governance* (pp. 173-178). Springer. https://doi.org/10.1007/978-3-540-70818-6_14

Giannetti, A. (2021). Local Economic Conditions and Repeat-Sale Indices Performance: Evidence from a Moderation Effect Specification. *Journal of Real Estate Research, 43,* 271-289. https://doi.org/10.1080/08965803.2021.1942751

Gilbert, N., Ahrweiler, P., Barbrook-Johnson, P., Narasimhan, K. P., & Wilkinson, H. (2018). Computational Modelling of Public Policy: Reflections on Practice. *Journal of Artificial Societies and Social Simulation, 21,* 14. https://doi.org/10.18564/jasss.3669

Harriss-White, B. (2006). Poverty and Capitalism. *Economic and Political Weekly, 41,* 1241-1246. https://www.jstor.org/stable/4418024

Harter, J. (2025). *U.S. Employee Engagement Sinks to 10-Year Low*. Gallup Workplace. https://www.gallup.com/workplace/654911/employee-engagement-sinks-year-low.aspx

Heath, B. L., & Jackson, R. A. (2013). Ontological Implications of Modeling and Simulation in Postmodernity. In A. Tolk (Ed.), *Ontology, Epistemology, and Teleology for Modeling and Simulation* (pp. 89-103). Springer. https://doi.org/10.1007/978-3-642-31140-6_4

Hersh, E., & Shah, S. (2025). The Partisan Realignment of American Business: Evidence from a Survey of Corporate Leaders. *British Journal of Political Science, 55,* e79. https://doi.org/10.1017/s0007123425000304

Hoad, K., Robinson, S., & Davies, R. (2010). Automated Selection of the Number of Replications for a Discrete-Event Simulation. *Journal of the Operational Research Society, 61,* 1632-1644. https://doi.org/10.1057/jors.2009.121

Jackson, R. (2022). *Management in Quandary: A Critique of Organizational Power*.

Jackson, R. A. (2025). Management Is [Fill in the Blank]: Making Sense of an Ideological Praxis through Textual Analysis. *American Journal of Industrial and Business Management, 15,* 315-361. https://doi.org/10.4236/ajibm.2025.152016

Jackson, R. A., & Heath, B. L. (2024). Ideology & Revolution in the Society of the Spectacle. *Open Journal of Philosophy, 14,* 904-940. https://doi.org/10.4236/ojpp.2024.144061

Jackson, R. A., & Heath, B. L. (2025a). *AI Firms, and the Risk of Increasingly Inoperative Communications with the Fragmented-Social Collective*.

Jackson, R. A., & Heath, B. L. (2025b). How Corporate Leadership Misleads Workers. *Open Journal of Business and Management, 13,* 2712-2738. https://doi.org/10.4236/ojbm.2025.134144

Jackson, R. A., Slover, E. M., & Heath, B. L. (2022). Perceptions of Power and Organizational Sentiment: Analysis of One-Word Descriptions. *International Journal of Social Science and Humanity, 12,* 130-136. https://doi.org/10.18178/ijssh.2022.12.3.1079

Jalali, M. S., Siegel, M., & Madnick, S. (2019). Decision-Making and Biases in Cybersecurity Capability Development: Evidence from a Simulation Game Experiment. *The Journal of Strategic Information Systems, 28,* 66-82. https://doi.org/10.1016/j.jsis.2018.09.003

Johnston, C. (1900). Nihilism and Anarchy. *The North American Review, 171,* 302-313. https://www.jstor.org/stable/25105054?seq=1#:~:text=https://www.jstor.org/stable/25105054

Kallus, N., Mao, X., & Zhou, A. (2022). Assessing Algorithmic Fairness with Unobserved Protected Class Using Data Combination. *Management Science, 68,* 1959-1981. https://doi.org/10.1287/mnsc.2020.3850

Keenan, D., Frankel, B., & Foster, D. (2022). *The Future of ERGs: Are Affinity-Based Groups Still Necessary*? Seramount. https://seramount.com/wp-content/uploads/2022/11/Future-of-ERGs_Are-Affinity-Based-Groups-Necessary.pdf

Kennedy, P. (2017). Individualization and the Cultures of Capitalism. In P. Kennedy (Ed.), *Vampire Capitalism: Fractured Societies and Alternative Futures* (pp. 169-201). Palgrave Macmillan UK. https://doi.org/10.1057/978-1-137-55266-2_6

Kim, M. (2025). Signaling Commitment via Insincere Conformity: A New Take on the Persistence of Unpopular Norms. *Social Psychology Quarterly, 88,* 111-134. https://doi.org/10.1177/01902725241239953

Klein, D., Marx, J., & Scheller, S. (2019). Rational Choice and Asymmetric Learning in Iterated Social Interactions—Some Lessons from Agent-Based Modeling. In K. Marker, A. Schmitt, & J. Sirsch (Eds.), *Demokratie und Entscheidung: Beiträge zur Analytischen Politischen Theorie* (pp. 277-294). Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-24529-0_18

Kollmeyer, C. J. (2004). Corporate Interests: How the News Media Portray the Economy. *Social Problems, 51,* 432-452. https://doi.org/10.1525/sp.2004.51.3.432

Krasker, W. S., & Pratt, J. W. (1986). Bounding the Effects of Proxy Variables on Regression Coefficients. *Econometrica, 54,* 641-655. https://doi.org/10.2307/1911312

Lamé, G., & Dixon-Woods, M. (2020). Using Clinical Simulation to Study How to Improve Quality and Safety in Healthcare. *BMJ Simulation and Technology Enhanced Learning, 6,* 87-94. https://doi.org/10.1136/bmjstel-2018-000370

Lang, C., & Pearson-Merkowitz, S. (2022). Aggregate Data Yield Biased Estimates of Voter Preferences. *Journal of Environmental Economics and Management, 111,* Article ID: 102604. https://doi.org/10.1016/j.jeem.2021.102604

Law, A. M. (2022). How to Build Valid and Credible Simulation Models. In *2022 Winter Simulation Conference (WSC)* (pp. 1283-1295). IEEE. https://doi.org/10.1109/wsc57314.2022.10015411

Law, A. M. (2024). *Simulation Modeling and Analysis* (6th ed.). McGraw Hill.

Lemos, C. M. (2018). Analysis of Conflict Datasets and Indicators: The Case of the "Arab Spring". In C. M. Lemos (Ed.), *Agent-Based Modeling of Social Conflict: From Mechanisms to Complex Behavior* (pp. 29-49). Springer International Publishing. https://doi.org/10.1007/978-3-319-67050-8_4

Lenin, V. I. (2011). *State and Revolution*. Martino Publishing.

Lenin, V. I. (2013). *What Is to Be Done*? Martino Publishing.

Logan, J. (2021). Crushing Unions, by Any Means Necessary: How Amazon's Blistering Anti-Union Campaign Won in Bessemer, Alabama. *New Labor Forum, 30,* 38-45. https://doi.org/10.1177/10957960211035082

Luijken, K., Groenwold, R. H. H., Van Calster, B., Steyerberg, E. W., & van Smeden, M. (2019). Impact of Predictor Measurement Heterogeneity across Settings on the Performance of Prediction Models: A Measurement Error Perspective. *Statistics in Medicine, 38,* 3444-3459. https://doi.org/10.1002/sim.8183

Lukosch, H. K., Bekebrede, G., Kurapati, S., & Lukosch, S. G. (2018). A Scientific Foundation of Simulation Games for the Analysis and Design of Complex Systems. *Simulation & Gaming, 49,* 279-314. https://doi.org/10.1177/1046878118768858

Lunsford, K. G. (2015). *Identifying Structural VARs with a Proxy Variable and a Test for a Weak Proxy (No. 15-28)*. https://doi.org/10.26509/frbc-wp-201528

Luxemburg, R. (2024). *Reform or Revolution*. Pathfinder.

Maier, F., Meyer, M., & Steinbereithner, M. (2016). Nonprofit Organizations Becoming Business-Like: A Systematic Review. *Nonprofit and Voluntary Sector Quarterly, 45,* 64-86. https://doi.org/10.1177/0899764014561796

Marcuse, H. (2013). *One-Dimensional Man: Studies in the Ideology of Advanced Industrial Society*. Routledge.

Martin, C. R. (2015). The News Media and Strikes. In *The Encyclopedia of Strikes in American History* (pp. 44-51). Routledge.

Marx, K., & Engels, F. (2023). The German Ideology. In *Social Theory Re-Wired* (pp. 123-127). Routledge. https://doi.org/10.4324/9781003320609-16

Meyer, R. E. (2008). *Perpetual Struggle: Sources of Working-Class Identity and Activism in Collective Action*. University of Michigan.

Mintzberg, H. (1983). *Power in and around Organizations*. Prentice-Hill. https://doi.org/10.1177/017084068400500419

Moder, G. (2021). Thinking, Acting, and Acting by Thinking: Marx and Althusser. In *Thought: A Philosophical History* (pp. 266-278). Routledge. https://doi.org/10.4324/9780429445026-19

Mori, K., & Arai, M. (2010). No Need to Fake It: Reproduction of the Asch Experiment without Confederates. *International Journal of Psychology, 45,* 390-397. https://doi.org/10.1080/00207591003774485

Oloba, O. N. (2020). Evaluation of Simulated Agent: Based Computational Models of Civil Violence with the Boko Haram Conflict. In *Proceedings of the 2018 Conference of the Computational Social Science Society of the Americas* (pp. 265-282). Springer International Publishing. https://doi.org/10.1007/978-3-030-35902-7_17

Patnaik, U. (2012). Capitalism and the Production of Poverty. *Social Scientist, 40,* 3-20. https://www.jstor.org/stable/23124193

Pew Research Center (2022). *Modest Declines in Positive Views of "Socialism" and "Capitalism" in U.S.: Many Democrats Say Socialism Meets People's Basic Needs; Republicans Say It Restricts Individual Freedom*. https://www.pewresearch.org/politics/2022/09/19/modest-declines-in-positive-views-of-socialism-and-capitalism-in-u-s/

Pew Research Center (2024). *Most Americans Feel Good about Their Job Security but Not Their Pay*. https://www.pewresearch.org/wp-content/uploads/sites/20/2024/12/PST_2024.12.10_americans-jobs_report.pdf

Pierce, T. (2025). *Turnover Rate*. Eddy. https://eddy.com/hr-encyclopedia/turnover-rate/

Pires, B., Goldstein, J., Molfino, E., Ziemer, K., Orr, M., & Jiménez, J. (2024). Knowledge Sharing in a Dynamic, Multi-Level Organization: An Agent-Based Modeling Approach. *Computational and Mathematical Organization Theory, 30,* 75-100.

https://doi.org/10.1007/s10588-023-09373-8

Plata, S. (2025). *Corporate America & Unions*.

Robinson, S., & Brooks, R. (2024). Assumptions and Simplifications in Discrete-Event Simulation Modelling. *Journal of Simulation,* 1-18. https://doi.org/10.1080/17477778.2024.2407369

Rossi, E., & Argenton, C. (2021). Property, Legitimacy, Ideology: A Reality Check. *The Journal of Politics, 83,* 1046-1059. https://doi.org/10.1086/710781

Sanders, M. L., & McClellan, J. G. (2014). Being Business-Like While Pursuing a Social Mission: Acknowledging the Inherent Tensions in US Nonprofit Organizing. *Organization, 21,* 68-89. https://doi.org/10.1177/1350508412464894

Schwaninger, M., & Groesser, S. (2018). System Dynamics Modeling: Validation for Quality Assurance. In R. A. Meyers (Ed.), *Encyclopedia of Complexity and Systems Science* (pp. 1-20). Springer. https://doi.org/10.1007/978-3-642-27737-5_540-4

Seltzer, R. G. N. (2021). The Perilous Use of Proxy Variables. *Evaluation & the Health Professions, 44,* 428-435. https://doi.org/10.1177/0163278720903358

Siegfried, R., Lehmann, A., El Abdouni Khayari, R., & Kiesling, T. (2009). A Reference Model for Agent-Based Modeling and Simulation. In *Proceedings of the 2009 Spring Simulation Multiconference* (pp. 1-8). Society for Computer Simulation International. https://www.researchgate.net/publication/220954419_A_reference_model_for_agent-based_modeling_and_simulation#fullTextFileContent

Silva, I. R., & Zhuang, Y. (2022). Bounded-Width Confidence Interval Following Optimal Sequential Analysis of Adverse Events with Binary Data. *Statistical Methods in Medical Research, 31,* 2323-2337. https://doi.org/10.1177/09622802221122383

Skocpol, T. (1979). Cambridge University Press. https://doi.org/10.1017/cbo9780511815805

Stahlecker, P., & Trenkler, G. (1993). Some Further Results on the Use of Proxy Variables in Prediction. *The Review of Economics and Statistics, 75,* 707-711. https://doi.org/10.2307/2110026

Sterman, J. (2018). System Dynamics at Sixty: The Path Forward. *System Dynamics Review, 34,* 5-47. https://doi.org/10.1002/sdr.1601

Subramanian, A. S. R., Gundersen, T., & Adams, T. A. (2018). Modeling and Simulation of Energy Systems: A Review. *Processes, 6,* Article No. 238. https://doi.org/10.3390/pr6120238

Tang, C., & Liu, Y. (2023). Agent-Based Modeling. In *Computational Modeling for Industrial-Organizational Psychologists* (pp. 181-210). Routledge. https://doi.org/10.4324/9781003388852-9

Tilly, C. (1978). *From Mobilization to Revolution*. Addison-Wessley.

Tulli, S. K. C. (2024). Motion Planning and Robotics: Simplifying Real-World Challenges for Intelligent Systems. *International Journal of Modern Computing, 7,* 57-71.

Turner, B. S. (1988). Individualism, Capitalism and the Dominant Culture: A Note on the Debate. *The Australian and New Zealand Journal of Sociology, 24,* 47-64. https://doi.org/10.1177/144078338802400103

van der Zwet, K., Barros, A. I., van Engers, T. M., & Sloot, P. M. A. (2023). Promises and Pitfalls of Computational Modelling for Insurgency Conflicts. *The Journal of Defense Modeling and Simulation: Applications, Methodology, Technology, 20,* 333-350. https://doi.org/10.1177/15485129211073612

Verma, R. K. (2025). *From Thought to Action: Rational Agency and the Normative Struc-*

ture of Deliberation. https://dx.doi.org/10.2139/ssrn.5227905

Viinikainen, J., Böckerman, P., Elovainio, M., Hakulinen, C., Hintsanen, M., Kähönen, M. et al. (2020). Personality, Occupational Sorting and Routine Work. *Employee Relations: The International Journal, 42,* 1423-1440. https://doi.org/10.1108/er-06-2019-0253

Walo, S. (2023). *Measuring Historical Changes in Capitalist Ideology with Word Embeddings*.

Wang, H. R. et al. (2018). An Agent-Based Modeling and Simulation of Consumers' Purchase Behavior for Wine Consumption. *IFAC-PapersOnLine, 51,* 843-848. https://doi.org/10.1016/j.ifacol.2018.08.089

White, I. R., Pham, T. M., Quartagno, M., & Morris, T. P. (2024). How to Check a Simulation Study. *International Journal of Epidemiology, 53,* dyad134. https://doi.org/10.1093/ije/dyad134

Wickham, H., Chang, W., Henry, L., Pedersen, T. L., Takahashi, K., Wilke, C., Woo, K., Yutani, H., Dunnington, D., & van den Brand, T. (2025). *ggplot2: Create Elegant Data Visualizations Using the Grammar of Graphics (Version 3.5.2) [Computer Software]*. https://doi.org/10.32614/CRAN.package.ggplot2

Wickham, H., François, R., Henry, L., & Müller, K. (2023). *dyplr: A Grammar of Data Manipulation (Version 1.1.4) [Computer Software]*. https://doi.org/10.32614/CRAN.package.dplyr

Williams, T. G., Brown, D. G., Guikema, S. D., Logan, T. M., Magliocca, N. R., Müller, B. et al. (2022). Integrating Equity Considerations into Agent-Based Modeling: A Conceptual Framework and Practical Guidance. *Journal of Artificial Societies and Social Simulation, 25,* 1. https://doi.org/10.18564/jasss.4816

Willmott, H. (1997). Rethinking Management and Managerial Work: Capitalism, Control, and Subjectivity. *Human Relations, 50,* 1329-1359. https://doi.org/10.1023/a:1016986511783

Wisman, J. D. (2020). Marx, the Predisposition to Reject Markets and Private Property, and Attractive Alternatives to Capitalism. *Forum for Social Economics, 49,* 281-298. https://doi.org/10.1080/07360932.2018.1468798

Yang, J., Dong, J., Song, Q., Otmakhova, Y. S., & He, Z. (2023). The Impacts of Payment Policy on Performance of Human Resource Market System: Agent-Based Modeling and Simulation of Growth-Oriented Firms. *Systems, 11,* Article No. 298. https://doi.org/10.3390/systems11060298

Yin, H., Varava, A., & Kragic, D. (2021). Modeling, Learning, Perception, and Control Methods for Deformable Object Manipulation. *Science Robotics, 6,* eabd8803. https://doi.org/10.1126/scirobotics.abd8803

Appendix A: RStudio Simulation Code

```
# Libraries
library(dplyr)
library(ggplot2)
library(triangle)
# Update ideology for a single agent
update_ideology <- function(i, agents, radicalized_worker_pressure, solidarity,
peer_influence, reactionary_pressure, capitalist_pressure) {
  agent <- agents[i, ]
  revolutionary_neighbors <- sum(agents$ideology == "revolutionary")
  peer_ratio <- revolutionary_neighbors / nrow(agents)
  if (agent$ideology == "reactionary") {
    pressure <- radicalized_worker_pressure * peer_ratio +
      solidarity * peer_ratio +
      peer_influence * peer_ratio
    if (runif(1) < pressure + agent$radicalization) {
      return("revolutionary")
    } else {
      return("reactionary")}
  } else {
    reversion_chance <- (reactionary_pressure + capitalist_pressure) * (1 -
agent$radicalization)
    if (runif(1) < reversion_chance) {
      return("reactionary")
    } else {
      return("revolutionary")}}}
# Remove and replace revolutionaries
remove_and_replace_revolutionaries <- function(agents, removal_prob) {
  is_revolutionary <- agents$ideology == "revolutionary"
  to_remove <- is_revolutionary & runif(nrow(agents)) < removal_prob
  num_removed <- sum(to_remove)
  agents <- agents[!to_remove, ]
  if (num_removed > 0) {
    new_ids <- max(agents$id) + seq_len(num_removed)
    new_agents <- data.frame(
      id = new_ids,
      ideology = rep("reactionary", num_removed),
      radicalization = runif(num_removed, 0, 1))
    agents <- rbind(agents, new_agents)}
  return(agents)}
# Run one simulation
run_simulation <- function(n_agents, n_steps) {
  initial_revolutionaries <- rtriangle(1, a = 0.00, b = 0.06, c = 0.00)
```

```
    peer_influence <- rtriangle(1, a = 0.75, b = 0.89, c = 0.75)
    capitalist_pressure <- rtriangle(1, a = 0.4, b = 0.7, c = 0.7)
    radicalized_worker_pressure <- rtriangle(1, a = 0.00, b = 0.14, c = 0.00)
    solidarity <- rtriangle(1, a = 0.06, b = 0.10, c = 0.06)
    reactionary_pressure <- rtriangle(1, a = 0.18, b = 0.30, c = 0.30)
    removal_probability <- rtriangle(1, a = 0.30, b = 0.55, c = 0.55)
    agents <- data.frame(
      id = 1:n_agents,
      ideology = sample(c("reactionary", "revolutionary"), n_agents,
                        replace = TRUE,
                        prob = c(1 - initial_revolutionaries, initial_revolutionaries)),
      radicalization = runif(n_agents, 0, 1))
    history <- data.frame(
      step = 0,
      reactionaries = sum(agents$ideology == "reactionary") / n_agents,
      revolutionaries = sum(agents$ideology == "revolutionary") / n_agents)
    for (step in 1:n_steps) {
      new_ideologies <- sapply(1:nrow(agents), function(i) {
        update_ideology(i, agents, radicalized_worker_pressure, solidarity,
                        peer_influence, reactionary_pressure, capitalist_pressure)})
      agents$ideology <- new_ideologies
      agents <- remove_and_replace_revolutionaries(agents, removal_probability)
      history <- rbind(history, data.frame(
        step = step,
        reactionaries = sum(agents$ideology == "reactionary") / n_agents,
        revolutionaries = sum(agents$ideology == "revolutionary") / n_agents))}
    return(history)}
  # Simulation Parameters
  target_ci_width <- 0.005
  min_runs <- 30
  max_runs <- 1000
  batch_size <- 10
  n_agents <- 100
  n_steps <- 50
  # Convergence Control
  sim_results <- data.frame()
  ci_tracking <- data.frame(n_runs = integer(), ci_width = numeric())
  n_runs <- 0
  ci_width <- Inf
```

```
  while ((ci_width > target_ci_width || n_runs < min_runs) && n_runs < max_runs) {
    new_batch <- do.call(rbind, lapply(1:batch_size, function(run_id) {
      run_simulation(n_agents, n_steps) %>%
        mutate(run = n_runs + run_id)}))
    sim_results <- rbind(sim_results, new_batch)
    n_runs <- n_runs + batch_size
    final_step_data <- sim_results %>%
      filter(step == n_steps) %>%
      group_by(run) %>%
      summarise(revolutionaries = mean(revolutionaries), .groups = "drop")
    se <- sd(final_step_data$revolutionaries) / sqrt(nrow(final_step_data))
    ci_width <- 1.96 * se
    ci_tracking <- rbind(ci_tracking, data.frame(n_runs = n_runs, ci_width = ci_width))
    cat(sprintf("Runs: %d | Current 95%% CI Width: %.4f\n", n_runs, ci_width))}
  cat(sprintf("\n Converged after %d simulation runs (to 95%% CI width ≤ %.4f)\n",
                n_runs, target_ci_width))
  # Estimate steady-state proportions from final step
  steady_state_summary <- final_step_data %>%
    summarise(
      mean_revolutionaries = mean(revolutionaries),
      sd_revolutionaries = sd(revolutionaries),
      min_revolutionaries = min(revolutionaries),
      max_revolutionaries = max(revolutionaries),
      mean_reactionaries = 1 - mean(revolutionaries),
      sd_reactionaries = sd(revolutionaries),
      min_reactionaries = 1 - max_revolutionaries,
      max_reactionaries = 1 - min_revolutionaries)
  print(steady_state_summary)
  # Summary Stats
  summary_stats <- sim_results %>%
    group_by(step) %>%
    summarise(
      mean_reactionaries = mean(reactionaries),
      sd_reactionaries = sd(reactionaries),
      mean_revolutionaries = mean(revolutionaries),
      sd_revolutionaries = sd(revolutionaries),
      .groups = "drop"
    ) %>%
    mutate(
```

```
    upper_react = mean_reactionaries + sd_reactionaries,
    lower_react = mean_reactionaries - sd_reactionaries,
    upper_revolt = mean_revolutionaries + sd_revolutionaries,
    lower_revolt = mean_revolutionaries - sd_revolutionaries)
label_data <- summary_stats %>%
  filter(step == max(step)) %>%
  select(step, mean_reactionaries, mean_revolutionaries)
```

Appendix B: RStudio Data Visualization Code

```
# Figure 1: CI Convergence Plot
ggplot(ci_tracking, aes(x = n_runs, y = ci_width)) +
  geom_line(color = "black", size = 1.2) +
  geom_hline(yintercept = target_ci_width, linetype = "dashed", color = "gray40") +
  annotate("text", x = max(ci_tracking$n_runs), y = target_ci_width + 0.0025,
           label = paste("Target CI Width =", target_ci_width),
           hjust = 1.1, color = "gray40", size = 4, family = "Times New Roman") +
  labs(
    title = "Convergence of 95% Confidence Interval Width",
    x = "Number of Simulation Runs",
    y = "CI Width (95%)") +
  theme_minimal() +
  theme(
    text = element_text(family = "Times New Roman"),
    plot.title = element_text(size = 14, family = "Times New Roman"))

# Figure 2: Management Ideology Assessment Plot
ggplot(summary_stats, aes(x = step)) +
  annotate("rect", xmin = 50, xmax = Inf, ymin = -Inf, ymax = Inf, fill = "white") +
  geom_ribbon(aes(ymin = lower_react, ymax = upper_react), fill = "gray80", alpha = 0.5) +
  geom_ribbon(aes(ymin = lower_revolt, ymax = upper_revolt), fill = "pink", alpha = 0.5) +
  geom_line(aes(y = mean_reactionaries), color = "black", linewidth = 1.2) +
  geom_line(aes(y = mean_revolutionaries), color = "red", size = 1.2) +
  geom_text(data = label_data,
            aes(x = step + 0.5, y = mean_reactionaries),
            label = "Reactionary", color = "black", hjust = 0, size = 5, family = "Times New Roman") +
  geom_text(data = label_data,
            aes(x = step + 0.5, y = mean_revolutionaries),
```

```
                label = "Revolutionary", color = "red", hjust = 0, size = 5, family
= "Times New Roman") +
    labs(title = paste("Management Ideology (Mean ± SD) —", n_runs, "Simula-
tion Runs"),
         y = "Percentage of Management Agents by Ideology", x = "Time Step")
+
    theme_minimal() +
    theme(
      text = element_text(family = "Times New Roman"),
      plot.title = element_text(family = "Times New Roman"),
      axis.title = element_text(family = "Times New Roman"),
      axis.text = element_text(family = "Times New Roman")) +
    scale_x_continuous(
      breaks = seq(0, n_steps, by = 10),
      limits = c(0, n_steps + 5))
  # Figure 3: Revolutionary Critical Mass Assessment Plot
  summary_stats_trunc <- summary_stats %>% filter(step <= 50)
  ggplot(summary_stats_trunc, aes(x = step)) +
    annotate("rect", xmin = 0, xmax = 50, ymin = 0.035, ymax = 0.30, fill =
"gray50", alpha = 0.5) +
    geom_ribbon(aes(ymin = lower_revolt, ymax = upper_revolt), fill = "pink",
alpha = 0.5) +
    geom_line(aes(y = mean_revolutionaries), color = "red", size = 1.2) +
    annotate("text", x = 31, y = 0.16,
             label = "Minimum Critical Mass Zone for Successful Management
Revolution",
             color = "black", size = 5, family = "Times New Roman", hjust =
0.7, vjust = 1.0) +
    labs(title = paste("Revolutionary Critical Mass Assessment (Mean ± SD) —",
n_runs, "Simulation Runs"),
         y = "Percentage of Revolutionary Management Agents",
         x = "Time Step") +
    theme_minimal() +
    theme(
      text = element_text(family = "Times New Roman"),
      plot.title = element_text(family = "Times New Roman"),
      axis.title = element_text(family = "Times New Roman"),
      axis.text = element_text(family = "Times New Roman")) +
    scale_y_continuous(labels = scales::percent_format(accuracy = 0.1), expand
= c(0, 0)) +
    scale_x_continuous(breaks = seq(0, 50, by = 10), limits = c(0, 50)) +
    coord_cartesian(ylim = c(0, max(summary_stats_trunc$upper_revolt, na.rm
= TRUE) * 1.1))
```