

A Political Model of Exit and Voice

Scott Gehlbach*

February 8, 2005

Abstract

I reexamine Hirschman's classic text *Exit, Voice, and Loyalty* through a game theoretic interpretation of the relationship between exit and voice. The model, which is general and applicable to diverse environments, treats exit as a costly decision which may be prevented through a change in policy by the leadership of an organization. Voice – the capacity of an organization's members to participate in the setting of policy – is similarly costly, but provides a share of the surplus from avoiding exit. The formalization sheds light on the static and dynamic effects of exit, the conditions for the development of voice, and the decision of organizational leaders to suppress voice and exit. The model is illustrated by revisiting Hirschman's analysis of exit and voice in the collapse of East German communism.

1 Introduction

Thirty-five years have elapsed since the publication of *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States* (Hirschman, 1970). In that work, Albert O. Hirschman suggested that individuals dissatisfied with the performance of an organization to which they belong or do business may try to improve their lot either by “exiting” from the organization and thus foregoing the goods or services it provides, or by remaining remain with the organization but attempting to improve its performance by “voicing” their discontent. In principle, both forms of response may motivate organizational leaders to be more responsive to their members. However, the existence of one response may stunt the growth of the other: the more discontent is dissipated through exit from the organization, the less likely it is to manifest itself in voice within the organization.

The enduring popularity of Hirschman's book can be attributed to the ability of this simple model to seemingly explain an array of political, economic, and social phenomena. While *Exit, Voice, and Loyalty* focused primarily on discontent with the performance of a firm, subsequent work has addressed the role of exit and voice in applications as diverse as the theory of the state (Hirschman, 1978), trade protection (Aggarwal, Keohane and Yoffie, 1987), party loyalty (Kato, 1998), labor organization (Freeman, 1980), and education (Chubb and Moe, 1988; Witte, 1999).¹

*Department of Political Science, UW Madison. Email: gehlbach@polisci.wisc.edu.

¹This list of applications is clearly incomplete. For a more complete review, see Hirschman (1986) and Dowding et al. (2000).

However, despite wide application of the exit/voice dichotomy, there has been little *general* theoretical development of Hirschman's argument since his seminal contribution.² The failure to further develop the microfoundations of the relationship between exit and voice has led to confusion on such basic questions as when exit and voice function as substitutes, and when as complements (Hirschman, 1993). Reviewing three decades of literature based on Hirschman's work, Dowding et al. (2000) express disappointment in the empirical support for Hirschman's arguments, and argue that "a more rigorous methodology is required to test the precise relationships between exit and voice" (p. 491).

This research note presents a simple game theoretic model to elucidate the relationship between exit and voice, and thus to facilitate further empirical examination of that relationship. The model is incomplete, in that it abstracts from many important arguments made by Hirschman and others. It is, nonetheless, to my knowledge the first general formalization of Hirschman's argument since *Exit, Voice, and Loyalty*, in which Hirschman offered a graphical model expressed in terms of the consumer demand theory then hegemonic within economics (Hirschman, 1970, Appendixes A-D). The widespread adoption of game theory as a modeling tool since that time allows a reformulation of Hirschman's ideas in a form that should be more familiar and useful to many political scientists.

In particular, the model below assumes a conflict of interest between the leadership of an organization and its members. As in Hirschman's formulation, members may express their discontent either through exit from the organization, or through voice. Exercise of the exit option is assumed to be costly, in that the joint payoff to members and their leadership is greater when exit is avoided. Thus, there is a surplus to be divided between the organization's leadership and its members. The incentive for members to develop their voice, i.e. to overcome their collective-action problems, is to gain a share of this surplus.

A first key contribution of the model is to differentiate between static and dynamic effects of exit. Voice having been established, exit can increase the *effectiveness* of voice by increasing individuals' bargaining power. But viewed from the perspective of the decision to establish voice to begin with, exit can reduce voice by increasing the relative attractiveness of silence.

Beyond illuminating this distinction, the model suggests a relationship between exit and voice not emphasized in Hirschman's work. When the exit of individuals is more costly to the *leadership*, voice may increase, since individuals understand that their exit option has increased their potential bargaining power *vis-à-vis* the leadership.

Finally, the model suggests a framework for thinking about the decision of organizational leaders to suppress voice or exit. Leaders will typically have an incentive to suppress voice, I argue, since by doing so they can reduce the probability that they have to bargain with individuals over policy. However, they may or may not want to suppress exit: doing so reduces what must be surrendered to individuals within the organization, but increases the probability that individuals find their common voice.

I demonstrate the model by revisiting Hirschman's (1993) analysis of the collapse of communism in the German Democratic Republic. This exercise highlights the additional insights gained from formalization, but also underscores the important features of political reality absent from the model. The note concludes by suggesting ways in which the model might be generalized to

²One exception is the literature on cooperation in repeated games with an exit option. See, e.g., Orbell, Schwartz-Shea and Simmons (1984) and Schuessler (1989). While important work, the focus in that literature on the incentives for cooperation among members of an organization ignores the interaction between those members and the organization's leadership that is my concern.

incorporate those features.

2 Model

There is a population of identical individuals who belong to some organization.³ For concreteness, we let the organization to whom the individuals belong be the “state,” with individuals “citizens.” However, the model is meant to apply to any organization whose members have an exit option. We refer to any generic citizen as C , and to the leadership of the state as L .

At issue is some policy over which the state leadership has control. Assume that policy can take any value x between 0 and 1, where citizens receives payoff x and leadership payoff $(1 - x)$ from the policy. However, whatever policy x has been proposed by the leadership can only be implemented if citizens remain in the state. In the event they exit, the leadership receives payoff q_L and citizens q_C , where $(q_L + q_C) < 1$.⁴ Thus, there are gains from trade: there is always some policy x such that citizens and the leadership are both better off than when citizens exit the state. Absent this assumption, voice would make little sense, as the welfare of both citizens and their leadership could be improved through exit.

Figure 1 illustrates the timing of events. At the beginning of the game, citizens may choose to bear some cost w of organizing collectively. We abstract from the process by which this occurs, simply assuming that individuals manage to coordinate their actions if they would be better off organized than not. Should they so organize, then citizens and the state leadership bargain over x . (Note that the model can alternatively be viewed as involving some group of individuals who have already overcome their collective-action problems, but who must bear some cost to initiate negotiations with the leadership.) For simplicity, we assume that the outcome of this bargaining process is the Nash bargaining solution, which implies that any gains from trade are split 50-50 between the two parties. However, any division of bargaining power that guarantees citizens some positive fraction of the surplus will produce the same qualitative results. In contrast, if citizens do not organize, then the leadership makes a take-it-or-leave-it offer of x , in response to which citizens decide whether to remain in the state or exit.

Our solution concept is subgame-perfect Nash equilibrium. The following two subsections walk through the backwards induction by which the find the equilibrium.

Exit (and Policy Choice)

If citizens have organized, then they and the leadership bargain over the surplus, which is $1 - (q_L + q_C)$. Given our assumption that the Nash bargaining solution is agreed to, this implies policy $x_N = \frac{1+(q_C-q_L)}{2}$. (To see this, note that the share of the surplus received by the leadership $\left(1 - \frac{1+(q_C-q_L)}{2} - q_L\right)$ equals that received by the citizens $\left(\frac{1+(q_C-q_L)}{2} - q_C\right)$.) Thus, *exit increases the effectiveness of voice*. The possibility of exit (more precisely, the payoff q_C from exit) increases the power of citizens once they are at the bargaining table, since the leadership must leave them

³Formally, we assume a continuum of individuals of mass one, which implies that the payoff to any individual equals the average payoff for the population.

⁴More precisely, the payoff to the leadership is $\alpha(1 - x) + (1 - \alpha)q_L$, with α the proportion of citizens who have remained in the state. Given the homogeneity of the population, however, all citizens either exit or stay.

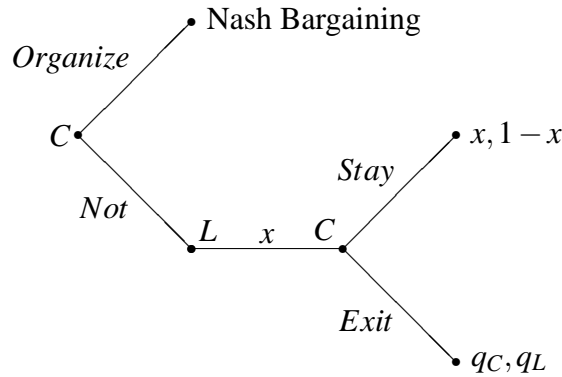


Figure 1: Sequence of Play

with more to keep them from exiting. Conditional on citizens' having already organized, voice and exit are complements.

However, exit can bring policy more in line with citizens' preferences even when they are not organized. When citizens have not overcome their collective-action problems, then the leadership makes the take-it-or-leave-it offer which leaves citizens with exactly their utility from exiting, i.e. $x_T = q_C$. Here, as when citizens are organized, an increase in the value of exit forces the leadership to be more accommodating.

Comparing the outcome of the policy-making process when citizens are organized and when they are not, we see:

1. $x_N > x_T$. Citizens receive more when they are organized than when they are disorganized, since they are able to demand a share of the surplus.
2. Citizens benefit more from a marginal increase in their exit payoff q_C in the take-it-or-leave-it environment than in the bargaining environment. Intuitively, citizens capture the full value of an increase in q_C when they are disorganized, since in that case the leadership leaves them with exactly what they would receive by exiting. In contrast, when citizens bargain with the leadership, then any increase in the value of citizens' exit option is partially offset by the fact that the surplus – now smaller – must be divided with the leadership. With less to divide, citizens are unable to take full advantage of the increase in q_C . As we will see, this has implications for the relationship between q_C and the decision to organize or not.
3. Exit never takes place in equilibrium. Rather, regardless of whether citizens are organized or not, the leadership always provides what is necessary to avoid exit. While this theoretical result hinges critically both on our assumption that players have complete information about each others' preferences (so that policy choice is efficient), and that there is no heterogeneity among individuals (otherwise the leadership might choose to let some citizens go), it does illustrate that the threat of exit need not be exercised to be important. Indeed, simply looking at the incidence of exit and voice tells us little about their interaction. Ultimately, it is the outcome – not just whether exit or voice have taken place, but the policy that has been chosen by the leadership – that is important.

Voice

Anticipating policy choice under these two scenarios, citizens choose to organize if their payoff from the collective bargaining process x_N , less their cost of organizing w , is greater than their payoff from the leadership's take-it-or-leave-it offer x_T , i.e.:

$$\frac{1 + (q_C - q_L)}{2} - w > q_C \quad (1)$$

or:

$$w < \frac{1 - (q_C + q_L)}{2} \quad (2)$$

This condition can be interpreted as follows: Most trivially, organization will take place when collective-action problems are easy to overcome (w is low). More interesting, and consistent with Hirschman's original argument, *exit reduces voice in the sense that citizens will be less likely to organize when their exit option q_C is large*. To see why this is the case, recall that the marginal benefit to citizens from an increase in q_C is greater when they are disorganized than when they are organized (point 2 above). Thus, an increase in the value of citizens' exit option makes voice relatively less attractive, even though it increases the effectiveness of voice, conditional on citizens' having organized. Voice and exit are complements once voice has been established, but are substitutes when seen from the perspective of the decision to exercise voice to begin with.

In addition, we see a relationship not directly implied by the basic exit/voice distinction: an increase in the value of exit to the leadership makes voice less likely. When citizens are organized, an increase in q_L increases the leadership's bargaining power in negotiations, since when q_L is high the leadership may walk away from the bargaining table at little cost. In contrast, when citizens are disorganized, an increase in q_L has no impact on the outcome: the leadership has all the bargaining power in any event, so citizens only receive their value from exit (q_C). Consequently, when exit does little to hurt the leadership (q_L is high), collective action will be relatively less attractive to individuals, reducing the incentive for them to organize.

Loyalty

In *Exit, Voice, and Loyalty*, Hirschman suggested that "loyalty" to an organization could keep individuals from exiting an organization, and thus increase their incentive to voice their discontent and bring about change from within. The model here shows in a transparent way why this might be the case.

Following Hirschman, we may consider a "cost of disloyalty" (Hirschman, 1970, p. 136) that reduces the payoff to exit. In terms of the model, loyalty reduces q_C , which as shown above has the effect of increasing the incentive to express discontent through voice. Whether this increases or decreases the welfare of citizens depends in part on whether the loyalty effect is large enough to push them into overcoming their collective-action problems and thus gaining a seat at the negotiating table. In the absence of this effect, loyalty is unambiguously bad for citizens, since the leadership may take advantage of their reticence to exit by offering a less favorable policy.

The Manipulation of Exit and Voice

In the discussion so far we have treated the cost of organizing and the value of exit as exogenous. However, many organizations have some control over these variables. Hirschman (1986, p. 79), for example, suggests that as “two basic, complementary ingredients of democratic freedom, exit and voice have on the whole been enlarged or restricted jointly.” Yet a bit of reflection suggests that there are times when exit and voice move in opposite directions. Dictators often open up the “safety valve,” allowing emigration abroad, at the same time as they crack down on dissent at home.

To explore the incentives of leaders to discourage voice and exit, we modify the model above so that, prior to citizens’ decision to organize or not, the leadership may (at some cost $g(w, q_C)$) increase w and decrease q_C from their starting values. (For simplicity, we assume that q_L is fixed.) Further, we assume that the cost of organization has a random component δ , realized after the leadership has chosen w and q_C , but before citizens choose whether or not to organize.⁵ Thus, citizens will choose to organize if:

$$w + \delta \leq \frac{1 - (q_C + q_L)}{2} \quad (3)$$

From the perspective of the leadership choosing w and q_C , the probability that citizens will choose to organize in defense of their interests is then $\Pr\left(\delta < \frac{1 - (q_C + q_L)}{2} - w\right)$. The leadership therefore chooses w and q_C to solve:

$$\max_{w, q_C} \Pr\left(\delta \leq \frac{1 - (q_C + q_L)}{2} - w\right) \left(\frac{1 + (q_L - q_C)}{2}\right) + \Pr\left(\delta > \frac{1 - (q_C + q_L)}{2} - w\right) (1 - q_C) - g(w, q_C) \quad (4)$$

where the first term is the leadership’s payoff from the Nash bargaining solution, weighted by the probability that citizens organize, and the second term is the leadership’s payoff from a take-it-or-leave-it offer, weighted by the probability that citizens do not organize.

Examining this expression, we observe that:

1. A change in w affects only the probability that citizens organize. Since the leadership is better off when citizens do not organize, it will always want to increase w .
2. A decrease in q_C (an increase in citizens’ cost of exit) increases the leadership’s policy payoff whether citizens are organized or not, but simultaneously increases the probability that citizens organize, thus making the leadership’s less-preferred outcome more likely.

The model thus suggests that leaders – at least those leaders whose preferences are not aligned with their citizens, as here – will always have an incentive to crack down on voice, but may or may not want to restrict exit. In contrast to voice, exit plays both a positive and negative role for the leadership: it makes voice less likely, but requires that the leadership provide more to citizens, whether they have voice or not.

⁵We assume that δ is distributed on some interval of the real number line according to a continuous and increasing distribution function, with a mean and variance such that we may rule out corner solutions.

3 Exit and Voice in the German Democratic Republic

Voice and exit played a spectacular role in the collapse of communism in Eastern Europe and the former Soviet Union. The role of the latter was especially prominent in the German Democratic Republic, where exit – for decades more possible than in other countries of the Soviet bloc due to the proximity of West Germany – accelerated dramatically in the regime’s last days, culminating in the fall of the Berlin Wall and the free movement of individuals from east to west. Writing in the immediate aftermath of these events, and noting the strong complementary role played by exit and voice in their unfolding, Hirschman wondered how it could be that “exit and voice now worked hand in glove after having undermined each other for four decades” Hirschman (1993, p. 202). This briefly section revisits the development of exit and voice in the period between the founding and collapse of communist rule in East Germany, using the model above to organize discussion.

Most striking in the relationship between exit and voice in East Germany is the strong support through most of the communist era for the hypothesis that exit and voice are substitutes. As Hirschman notes (Hirschman, 1993, pp. 179-180), exit was relatively more attractive for East Germans than it was for other citizens of the Soviet bloc. There was substantial opportunity to emigrate to the Federal Republic of Germany even after the construction of the Berlin Wall, an opportunity made more attractive by the fact that East Germans emigrating to the FRG automatically became West German citizens, and because they (unlike most immigrants) were able to retain their language and culture. In terms of the model above, q_C was large. Examination of (2), the condition for citizens to want to organize collectively, shows that this was sufficient to reduce the likelihood of vocal discontent.

In addition, however, the costliness of voice (w in the model) was relatively large for those contemplating collective action. The presence of East Germany on the front line of the Cold War meant that the GDR’s Soviet overseers were less inclined to tolerate dissent, and the absence of supportive institutions like the Catholic Church in Poland meant that potential dissidents had greater obstacles to surmount in organizing action against the regime (Hirschman, 1993, pp. 182-183). Together with the ready availability of exit, this implied that opposition would remain dormant in East Germany, even as discontent periodically exploded in neighboring communist states.

This tendency was reinforced by the policy of the regime to encourage some of its most vociferous opponents to emigrate to the West. The practice of “forced exit to reduce voice” (Hirschman, 1993, p. 184) essentially raised the payoff from exit (q_C) for a segment of the population, even as the cost of voice was maintained at a high level. Consistent with the model above, exit was thus encouraged even as voice was discouraged. However, in contrast to what is suggested by the model, those encouraged to leave actually did so, as the regime took advantage of heterogeneity in individuals’ willingness to organize to rid itself of its most unwelcome citizens even while avoiding mass emigration.

The quiescence of East German discontent ended abruptly in 1989, as hundreds of thousands of citizens took to the streets to demand political change.⁶ Contemporaneous with public demonstrations, a nascent opposition formed to negotiate with the government. On December 7 the government and opposition sat down to “Central Round Table” discussions that ultimately led to free elections and the dismantling of the communist state. The reintegration of East and West

⁶The dynamics of East German protest are discussed by Darnton (1991), Philipsen (1992), Garton Ash (1993), and Lohmann (1994), among others.

Germany followed in short order.

What accounted for the sudden reversal of four decades of acquiescence to the regime and its policies? The most likely explanation is that the cost of voice was suddenly perceived to be lower than it was before: as shown in equation (2), a drop in w sufficiently large will trigger collective action. The failure of the Soviet Union to intervene in Poland and Hungary earlier in the year, coupled with Soviet leader Mikhail Gorbachev's public expression of a hands-off policy in Eastern Europe, may have been sufficient to convince the East German public that collective action now carried fewer risks.

The dilemma posed by Hirschman, which is reinforced by equation (2), is that the cost of exit for East German citizens was declining (q_C was increasing) together with the cost of voice. Thus, the overall impact of changes in the political environment on the likelihood of voice is ambiguous. One response is simply to conclude that the cost of voice declined by more than did the cost of exit: in the model, that would be sufficient to trigger collective action. Another possibility suggested by equation (2) is that the value of exit to the East German leadership (q_L) fell as 1989 wore on and the hard-line Honecker regime was replaced with individuals concerned about the "tormenting" (*quälend*) exodus of East German citizens to the West.⁷

A more subtle argument is that the "toughness" of the regime – its willingness to accept emigration and its tolerance of dissent – was not known with certainty to the general public. Thus,

[t]he inability of the GDR, starting in the spring 1989, to prevent a large-scale flight of its citizens to West Germany, via Hungary, Poland, or Czechoslovakia, signaled a novel, serious, and *general* decline in state authority. (Hirschman, 1993, p. 187, emphasis in original)

In the model in this note there is, of course, no private information. The conclusion discusses the possibility of extending the model to incorporate information asymmetry.

What was the result of this sudden increase in voice among the East German public? As suggested by the model above, a citizenry that has overcome its collective-action problems will be able to demand a share of the surplus from not exiting, with the policy x_N resulting from the bargaining process more favorable to citizens (i.e. x_N is higher) the higher is the value of exit to citizens (q_C), and the lower is the value of exit to the leadership (q_L). With the opening of the Berlin wall, q_C increased dramatically at the same time as q_L fell: citizens no longer had armed border guards to fear, while the leadership faced the real possibility of the hollowing out the country's population. The result was an extraordinary shift in policy away from the leadership's preferences, with the change negotiated by the communist elite and a citizenry newly empowered to demand a seat at the table.

4 Conclusion

In *Development, Geography, and Economic Theory*, Paul Krugman discusses the history of economic theory by appealing to the formalization of another of Albert Hirschman's concerns: the idea that the government might, through a "big push" in investment, overcome the coordination

⁷Hirschman (1993, p. 196). The East German leader expressing this sentiment is Politburo member Günter Schabowski.

problem that keeps economies in a permanent state of underdevelopment (Krugman, 1995).⁸ Formalization, writes Krugman, promises various benefits, not least of which is the additional insight gained by making explicit the link between assumption and claim. However, in the short run the modeling enterprise carries the risk that scholars will forget what was known before, much as the Western world “forgot” what was in the interior of Africa once maps of the continent were subjected to the rigor of modern cartography.

Such is the case with the model in this note. While the formalization presented above of the relationship between exit and voice may provide additional insights – the distinction between static and dynamic effects of exit; the relationship between the policy outcome and the decision to organize on the one hand, and the value of exit to leadership and citizens on the other; the conclusion that the leadership will typically want to suppress voice, but may or may not want to suppress exit – much would be lost if the formalization were to stop here. As illustrated by the discussion of the collapse of Communism in East Germany, certain key features of the interplay between exit and voice stressed by Hirschman and others are absent from this model. These include:

- Heterogeneity among members of an organization: Individuals differ in both the value they attach to exit and the share of the cost of collective action which they would bear in the development of voice. In particular, some members of an organization may be more loyal than others, implying a greater cost of exit for those who are more loyal. When the leadership of an organization cannot set policy separately for each type of member, this may lead to a decision to allow some members to exit – perhaps those who would otherwise be most likely to voice their discontent.
- Information asymmetry: Members of an organization may not know with certainty the preferences of their leadership. As discussed in the context of the East German case, this may result in the unexpected phenomenon of the simultaneous development of exit and voice, since the leadership’s response to exit may provide information about its willingness to crack down on voice.

Future work should address these and other omissions. The result, one hopes, will be a deeper understanding of the relationship between exit and voice, and a richer set of hypotheses for empirical testing.

References

- Aggarwal, Vinod K., Robert O. Keohane and David B. Yoffie. 1987. “Dynamics of Negotiated Protectionism.” *American Political Science Review* 81(2):345–366.
- Chubb, John E. and Terry M. Moe. 1988. “Politics, Markets, and the Organization of Schools.” *American Political Science Review* 82(4):1065–1087.
- Darnton, Robert. 1991. *Berlin Journal: 1989-1990*. New York: W.W. Norton & Company.

⁸The idea originates with Rosenstein-Rodan (1943). The model of which Krugman writes is by Murphy, Shleifer and Vishny (1989).

- Dowding, Keith, Peter John, Thanos Mergoupis and Mark van Vugt. 2000. "Exit, Voice and Loyalty: Analytic and Empirical Developments." 37:469–495.
- Freeman, Richard B. 1980. "The Exit-Voice Tradeoff in the Labor Market: Unionism, Job Tenure, Quits, and Separations." *Quarterly Journal of Economics* 94(4):643–673.
- Garton Ash, Timothy. 1993. *The Magic Lantern*. New York: Vintage Books.
- Hirschman, Albert O. 1970. *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States*. Cambridge: Harvard University Press.
- Hirschman, Albert O. 1978. "Exit, Voice, and the State." *World Politics* 31(1):90–107.
- Hirschman, Albert O. 1986. Exit and Voice: An Expanding Sphere of Influence. In *Rival Views of Market Society and Other Recent Essays*, ed. Albert O. Hirschman. New York: Viking pp. 77–104.
- Hirschman, Albert O. 1993. "Exit, Voice, and the Fate of the German Democratic Republic: An Essay in Conceptual History." *World Politics* 45:173–202.
- Kato, Junko. 1998. "When the Party Breaks Up: Exit and Voice Among Japanese Legislators." *American Political Science Review* 92(4):857–870.
- Krugman, Paul R. 1995. *Development, Geography, and Economic Theory*. Cambridge, MA: MIT Press.
- Lohmann, Susanne. 1994. "The Dynamics of Informational Cascades: The Monday Demonstrations in Leipzig, East Germany, 1989-91." *World Politics* 47(1):42–101.
- Murphy, Kevin M., Andrei Shleifer and Robert W. Vishny. 1989. "Industrialization and the Big Push." *Journal of Political Economy* 97(5):1003–1026.
- Orbell, John M., Peregrine Schwartz-Shea and Randy T. Simmons. 1984. "Do Cooperators Exit More Readily than Defectors?" *American Political Science Review* 78(1):147–162.
- Philipsen, Dirk. 1992. *We Were the People: Voices from East Germany's Revolutionary Autumn of 1989*. Durham, NC: Duke University Press.
- Rosenstein-Rodan, Paul N. 1943. "Problems of Industrialisation of Eastern and South-Eastern Europe." *Economic Journal* 53:202–211.
- Schuessler, Rudolf. 1989. "Exit Threats and Cooperation under Anonymity." *Journal of Conflict Resolution* 33(4):728–749.
- Witte, John F. 1999. *The Market Approach to Education: An Analysis of America's First Voucher Program*. Princeton: Princeton University Press.