

DID STRATEGIC BEHAVIOR SAVE THE SCHINDLER JEWS?

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The list is an absolute good. The list is life. All around its margins lies the gulf. (Ben Kingsley as Itzhak Stern in *Schindler's List*)

I could've got more out . . . If I'd made more money . . . I didn't do enough. (Liam Neeson as Oskar Schindler in *Schindler's List*)

INTRODUCTION

Interpretation of well-known historical episodes often makes for interesting applications of economics. Recent examples include Bethell's [1998] description of how the Plymouth colonists benefited from land privatization (a property rights lesson). McClure and Van Cott [1994] point out how the U.S. government agents who worked at Indian reservations *and* were employed by U.S. General George Custer as intelligence sources faced monetary incentives to report falsely high reservation population counts, thus hastening Custer's demise at the Little Bighorn (a public choice lesson). Mixon [2000] suggests that Salem church ministers successfully employed Puritan religious doctrine regarding witchcraft to increase church membership in 1692. What followed was the now infamous Salem witch trials episode, wherein 20 people were hanged or pressed to death after being condemned as witches. The latter two of these episodes are dramatic given the associated human cost (that is, lives lost).

The present article argues that one aspect of the Nazi Holocaust of the 1930s/1940s offers yet another example of the explanatory power of economic science. As with other studies that portray the usefulness of history and culture in explaining economics principles [Becker and Watts, 1995; 1998; Trandel, 1999; Kish-Goodling, 1998; Tinari and Khandke, 2000], we develop game theoretical tools to describe the Oscar-winning movie portrayal—*Schindler's List* [1994]—of Oskar Schindler's attempts to save 1,100 Polish Jews from Nazi death camps. Our game-theoretical model matches Oskar Schindler, the movie's hero, against Amon Goeth, the movie's villain, as rivals in a sequential game, the outcome of which depends upon important strategic behavioral concepts. Below, we use dialogue and scenarios from the movie, along with a game tree, to discuss game theoretic concepts such as signaling, reputation, credibil-

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ity, commitment, signals, asymmetric information, and backward induction. Work by Dixit and Nalebuff [1991], Rasmusen [1991], Bierman and Fernandez [1993], and Dixit and Skeath [1999] are useful resources for integrating our example into a discussion module that would be useful in undergraduate courses on game theory and industrial organization as well as MBA economics classes.

OSKAR SCHINDLER AS PROFITEER: SETTING THE STAGE

The movie opens with Oskar Schindler (played by Liam Neeson), a German entrepreneur of questionable business acumen and character, building relationships with German SS officers in Poland, shortly after the German conquest of that country in September of 1939.¹ His early attempts at rent seeking prove successful, and soon thereafter Schindler decides to buy a confiscated factory in Krakow to produce *matériel* for the German army, thus taking advantage of his newly-established popularity with German officers.² At this point, he engages Itzhak Stern, a Jewish accountant (played by Ben Kingsley), who, based on *Edict 44/91*, has been sent to the Jewish ghetto in Krakow.³ Schindler explains to Stern that he needs Jewish financial capital to buy the factory, and that if Stern would run the day-to-day activities of the company, he (Schindler) could "...make a fortune." He offers the Jewish investors enamelware as a return on their financial investment, and proposes to hire skilled and unskilled Jewish workers from the ghetto (at 7 Reich marks and 5 Reich marks per day, respectively), instead of non-Jewish Poles.⁴ As Schindler states to Stern [T1, 0:23:30]:⁵

Schindler: Poles cost more . . . Why should I hire Poles?

This passage, among others, portrays Schindler as viewing the Jews much like profit-enhancing physical capital assets in his quest for fortune, although he does hint to the incidental effect of offering protection to those he would employ.⁶ Although his profiteering reputation was not part of any strategic plan by Schindler in the beginning, it would serve him well later.

GAME-THEORETIC LESSONS FROM SCHINDLER'S LIST

As Dixit and Skeath discuss [1999, 21-22], your opponents in a strategic game are purposive rational players and know that you are one too. They will recognize your incentive to exaggerate or even lie. Therefore, they will not accept your unsupported declarations; they can be convinced only by objective evidence or by actions that are *credible* proof of your information. Such actions are called *signals*, and strategies that use them are called *signaling* [Dixit and Skeath, 1999, 22]. One form of this strategy is that a player "establish and use a reputation" [Dixit and Nalebuff, 1991, 144].

Relatedly, in the strategic management literature [Weigelt and Camerer, 1988], one's character is privately known information, and is known as one's "type." While each player knows his/her own type, players are often uncertain about their rivals' types. Players form beliefs about rivals' probable types from their reputations. In this view, knowledge of one's own type and his/her rival's type allows for the possibility of an *asymmetric information* advantage [Dixit and Skeath, 1999]. This is consistent with our example that follows, wherein Schindler *conceals* his own type—via *signaling*—in the presence of knowledge about his rival's type.

The Holocaust was the result of a systematic plan by the German government to eradicate Europe's Jewish population, and all of the German characters in the film (for example, SS officers) are depicted as active participants in this process. As a profiteer using Jewish slave labor, not through a strategic decision-making calculus, Schindler develops a reputation for being (at least) unopposed to the Third Reich's policies regarding the Jews. Other examples help describe the way that Schindler acquired his reputation as a profiteer. First, when Schindler receives word that one of his employees had been executed, his only complaint to the SS concerns the negative effect this lost resource will have on his enterprise's profits.⁷ A second example occurs when Stern leaves the ghetto without his work permit and is promptly arrested and boarded on a train to Auschwitz. Schindler uses his influence to save Stern, castigating him for his carelessness that could have led to lower profits for Schindler. A third example involves the entry of the movie's villain, SS Untersturmführer Amon Goeth (portrayed by Ralph Fiennes).⁸ After Goeth moves the Jewish laborers from the Krakow ghetto into the Plaszow camp (outside of Krakow), Schindler berates Goeth over the forced relocation and lost work day, resulting in lower profits. In addition to augmenting other examples of the profiteering reputation that attaches to Schindler, this example is important because it represents Goeth's initial glimpse of the character that Schindler previously portrayed among other Nazi officials.

At the midpoint of the movie, Schindler's attitude toward his Jewish workforce begins to change, after Stern takes the liberty of bringing children and elderly Jews from Plaszow to the factory. At one point, a Polish Jew who escaped the Nazis visits Schindler and requests that he hire her parents. She tells him that people view his factory as a haven, and that they view Schindler as a good man [T1, 1:25:00]. At this point, Schindler is somewhat reluctant to officially turn his money-making enterprise into a haven. However, Stern argues that Goeth enjoys killing and recounts the story of Goeth's assassination of 25 Jews on a single occasion [T1, 1:34:40]. Upon hearing this account, Schindler decides to save the woman's parents, and he begins to embark on a *deceptive* course to save all of his workforce from the Holocaust. At this point, the further building of his profiteer reputation is a conscious act—a *signal*.⁹

Near the end of the war, *Department D* orders Goeth to "liquidate" the Plaszow Jews. Schindler embarks on his ultimate course of action—to buy the 1,100 Jewish workers, under the pretense of further using them to increase his fortune, thus preserving his profiteer reputation with Goeth. On his visit to Goeth's camp, which highlights the use of this example as a game-theoretic model, the following dialogue occurs (T2, 0:09:20):¹⁰

Goeth: I don't understand . . . you want these people?

Schindler: These people, *my* people . . . I want *my* people.

Goeth: Who are you, Moses? Where's the money in this, where's the scam? . . .

Schindler: It's good business . . . It's good for me. I know them, I'm familiar with them . . . It's good for you . . .

Goeth: Yeah, that's right . . . You're probably scamming me somehow . . . If I'm making 100 [RM], you've got to be making 3[00 RM] . . . If you admit to 3[00 RM], then it's really 4[00 RM] . . . But how? Don't tell me, I'll go along with it.

Schindler: . . . What's a person worth to you?

Goeth: No, no, no, no. What's one worth to *you*?

Our game-theoretical model has three players: "Nature," Schindler and Goeth. As the first mover in the game, Nature sets Schindler's type as either "mean" or "nice." As the second mover, Schindler proposes to purchase the Jewish workers from Goeth, who, as the third mover, has the option of accepting ("trade") or refusing ("don't trade") Schindler's proposal. As the (potentially) fourth mover, Schindler has the option to "protect" ("don't protect") the Jewish workers from the death camps. We treat the negotiation between Schindler and Goeth as a *sequential game*, and employ a *game tree*, which is presented as Figure 1 [Dixit and Skeath, 1999].

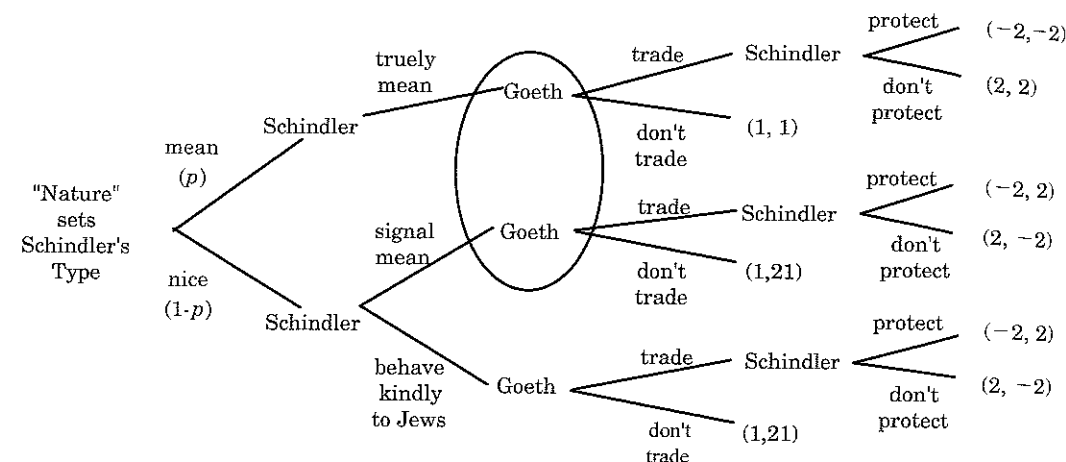
Payoffs regarding various outcomes are highlighted in Figure 1. These depict the potential rewards to both Goeth and Schindler, respectively, from their dealings regarding the 1,100 Jewish workers. (Note that payoffs to the Jews are not directly relevant to the game). As Figure 1 illustrates, Goeth's payoff is higher when the Jews are not protected (that is, Goeth is a mean type). Goeth is depicted throughout the movie as being vehemently supportive of the Third Reich's policies regarding the Jews, and the movie's portrayal of his zealousness in liquidating the Krakow ghetto suggests that the Reich's policies have a "richer significance" to him than any monetary reward resulting from a trade with Schindler. Therefore, it can be inferred that, in his dealings with Schindler, Goeth prefers that the Jews be exterminated rather than gain freedom, and that the Nazi extermination policy be carried out irrespective of his own financial concerns. Goeth's ranking of the three possible outcomes regarding his remuneration from a (possible) trade and the fate of the Jews is:

1. (trade Jews, extermination)
2. (don't trade Jews, extermination)
3. (trade Jews, freedom)

Figure 1 payoffs indicate that a mean-type Schindler would have the same preference structure as Goeth (noted above). The payoffs in Figure 1 illustrate that a nice-type Schindler would most favor protecting the Jews in the event Goeth chooses "trade." However, among the other two possible outcomes—Goeth chooses "trade" and Schindler chooses "don't protect," or Goeth chooses "don't trade"—a nice-type Schindler prefers the latter, given that Schindler would not be responsible for the death of the 1,100 Jewish workers and would, therefore, avoid the psychic costs associated with direct responsibility.

We assume that both men, *ceteris paribus*, prefer positive (to zero/negative) payoffs in their business transactions with each other, without regard to the distributional (relative) outcomes in the payoffs [Beil and Beard, 1994].¹¹ As Figure 1 illustrates, Goeth does not have a *dominant strategy*. In other words, if he thinks Schindler will choose "don't protect," Goeth will choose "trade." If, however, he believes Schindler will choose "protect," Goeth will choose "don't trade."¹² In this case, knowing what type Schindler represents would assist Goeth in making a utility-maximizing decision. Goeth would correctly reason that a mean-type Schindler would choose "don't protect," and that a nice-type Schindler would choose "protect." One's type is privately known information, and Goeth must, therefore, assign probabilities to two possible outcomes. The probability that Schindler is mean is denoted as p , and $1-p$

FIGURE 1
Schindler's List Game Tree



Payoff Key: (Goeth, Schindler)

represents the likelihood that Schindler is nice. Goeth's decision whether to trade depends on his beliefs about the probability, p , that Schindler is mean. If Goeth's *a priori* thought is that p is large (small), he is more (less) likely to trade with Schindler.

Here is where Schindler's *signaling* is important. In conjunction with his trading proposal as second mover, a nice-type Schindler has the option of signaling that he is mean, after which Goeth's decision whether to trade arises. In attempting to predict Schindler's final decision to "protect" or "don't protect" should Goeth choose "trade," Goeth relies on past experience and what he believes about Schindler's character from other contexts [Dixit and Skeath, 1991, 31].¹³ Schindler's reputation with Goeth and the other Nazi officials is that of a profiteer, concerned more with his own profit than the welfare of the Jewish population. By first acquiring (non-strategically) and later strategically building his profiteer reputation with Goeth and the other Nazis (see note 9), Schindler has *signaled* that he is a mean type and will not protect the Jews. As Dixit and Nalebuff [1999] suggest, the aim of a signal is to alter the other players' beliefs about your information, and therefore change their choice of actions in a way favorable to oneself. A *signal*, however, must be credible. Schindler's *signal* that he is a mean type and would not protect the Jews is, by movie's end, contrary to his interest as a nice type (that is, he cares for the welfare of his workers). His reputation among Goeth and the SS, however, ensures his *credibility* with them. That is, the way he employed the Jews as physical assets (for profit motives) gives Goeth a belief that Schindler will choose not to protect them. Although near the beginning of the dialogue above Goeth perhaps has one last brief thought about p and $1-p$, his ultimate preoccupation appears to be with his remuneration (and economic surplus), and not with the fate of the 1,100 Jews. This view indicates that Schindler's prior *signaling* has been successful.

Ultimately, Schindler's plan is successful. He transfers millions of Reich marks (RM) to Goeth in return for the 1,100 Jews, whom he immediately transfers to a new munitions plant in Zwittau-Brnilitz, Czechoslovakia. There, he rejoins his profiteer

masquerade by informing SS guards that he wants no interference with production, and that the killing of Jewish workers allows him to prosecute offenders and file damage claims with the Third Reich. In the end, Oskar Schindler's actions save 1,100 Polish Jews from the Nazi Holocaust.

In 1958, Schindler was pronounced a "righteous person" by the Council of Yad Vashem in Jerusalem, and he was invited to plant a tree along the Avenue of the Righteous in Israel. Today, there are 6,000 descendants of the Schindler Jews. As our note points out, at a time when game theorists were formally developing their original models [von Neumann and Morgenstern, 1944], they were already being employed in ways that were, before that time, unimaginable.

CONCLUDING COMMENTS

The use of important historic events, coupled with an easily recognized media dramatization of that event, can provide a compelling tool for explaining economics principles. In this paper, we develop such a mechanism by analyzing events from the Holocaust, as portrayed in the Oscar-winning movie, *Schindler's List*. In the context of a model that matches Oskar Schindler (hero) against Amon Goeth (villain) as rivals in a sequential game, we propose that Schindler, by establishing a reputation (that is, signaling) that suggested he would choose an action favored by Goeth, but against his own interests, was able to effect his desired outcome. That is, through strategic behavior he saved 1,100 Polish Jews from extermination in Nazi death camps. The analysis of this aspect of the Holocaust via *Schindler's List* provides for an insightful pedagogical device for students of economics and strategy.

NOTES

The authors thank two anonymous referees, the editor of this *Journal*, and Mark Dickie for helpful comments. Any remaining errors are our own.

1. Our game-theoretic analysis of Oskar Schindler's real-world attempt to save 1,100 Jews from the Holocaust is, as noted above, based on the movie adaptation of events. We recognize that the movie's portrayal may be as much "Hollywood" as "history." Students, however, are familiar with this historical example primarily through the 1994 movie adaptation. As we argue below, our game-theoretic approach is consistent with the screenplay.
2. Schindler is depicted as being skillful at using *in-kind* rent seeking efforts to gain favor with the German government [Mixon, Laband and Ekelund, 1994]. He is shown ordering an associate to treat SS and army officers with gifts, which include fruits (the real "rarities"), German cigarettes, Cuban cigars, dark chocolate, cognac, champagne, nylon stockings and sardines [T1, 0:30:30].
3. For greater historical detail regarding the Holocaust, see Breton and Wintrobe [1986] and The Editors [1991a; 1991b].
4. As the movie points out, wages were paid by German industrialists to the Reich Economic Office, not to the Jewish workers themselves.
5. The movie comprises a two-tape set in VHS format. Our citation of movie quotes uses the counter device on the video cassette player, which displays the hour, the minute and the second (hour:minute:second). At the beginning of each tape, the counter was reset to 0:00:00. The two tapes are referred to as T1 and T2. The movie runs approximately three hours and 20 minutes.
6. Early in the movie, viewers sense Schindler's anticipation of the likely fate of Europe's Jews. When Stern initially offers resistance to Schindler's "business proposal" by stating that Jewish financiers were not likely to be interested, Schindler replies: "They should be . . . tell them they should be [0:13:41]." Stern's acceptance of Schindler's offer to run the company shows that he was aware of the perilous

future that the Polish Jews faced. It is also not surprising that the investors joined Schindler as well, given that their survival prospects were greatly enhanced by joining his economic enterprise.

7. In this conversation, the SS officer explained to Schindler that maltreatment of Jews was a national priority, and ultimately a matter of "richer significance" than Schindler's business enterprise [T1, 0:42:10].
8. From the U.S. perspective, Goeth's rank in the SS was equivalent to Second Lieutenant.
9. Examples of Schindler's deception include his outward indifference to Goeth's hobby of randomly killing (by rifle) Jews from the balcony of his Plaszow villa. Schindler's exuberant participation at Goeth's nightly parties also reinforces his reputation for supporting the Third Reich's Jewish policies. Lastly, at one point in the movie, Schindler even feigns outward concern over Goeth's alcohol consumption and general health.
10. Our example is amenable to the basic elements found in game theory. These are players (Schindler and Goeth), actions (sell the Jews, do not sell the Jews), payoffs, and so on. [Rasmusen, 1991, 22].
11. The dialogue above reflects each player's attempt to estimate the size of the economic surplus involved with the potential trade in order to establish a stronger bargaining position.
12. We assume that Schindler's choice to "protect" spares the 1,100 Jews from the Holocaust, whereas a choice of "don't protect" by Schindler, or "don't trade" by Goeth, results in certain death for them.
13. There are additional game-theoretic terms implicit in our example and Figure 1. For instance, the first two decision nodes for Goeth, the third mover in the sequential game, are in the same information set [Bierman and Fernandez, 1993]. Also, a general principle for sequential move games is that each player should attempt to determine his opponent's future responses, and use them in calculating his/her own best move. This is the familiar notion of "looking forward and reasoning back" [Dixit and Nalebuff, 1991, 34], most often referred to as *backward induction* [Dixit and Skeath, 1999]. In our example, Goeth "looks forward and reasons back" by making assessments of p and $1-p$ based on Schindler's past actions/reputation. Of course, the effectiveness of Schindler's *signaling* is important to Goeth's assessment.

REFERENCES

- Becker, W. E. and Watts, M. Teaching Tools: Teaching Methods in Undergraduate Economics. *Economic Inquiry*, October 1995, 692-700.
- Beil, R. O., Jr. and Beard, T. R. Do People Rely on the Self-Interested Maximization of Others? *Management Science*, February 1994, 252-62.
- Bethell, T. *The Nobelist Triumph: Property and Prosperity Through the Ages*. NY: St. Martin's Press, 1998.
- Bierman, H. S. and Fernandez, L. *Game Theory with Economic Applications*. Reading, MA: Addison-Wesley Publishing Company, Inc., 1993.
- Breton, A. and Wintrobe, R. The Bureaucracy of Murder Revisited. *Journal of Political Economy*, October 1986, 905-926.
- Dixit, A. and Nalebuff, B. *Thinking Strategically*. NY: W.W. Norton and Company, 1991.
- Dixit, A. and Skeath, S. *Games of Strategy*. NY: W.W. Norton & Company, 1999.
- The Editors. *The Apparatus of Death*. Alexandria, VA: Time-Life Books, 1991a.
- _____. *The Heel of the Conqueror*. Alexandria, VA: Time-Life Books, 1991b.
- Kish-Goodling, D.M. Using the *Merchant of Venice* in Teaching Monetary Economics. *Journal of Economic Education*, Fall 1998, 330-39.
- McClure, J. E. and Van Cott, T. N. Public Choice at the Little Bighorn. *Journal of Economic Education*, Spring 1994, 135-36.
- Mixon, F. G., Jr. *Homo Economicus* and the Salem Witch Trials. *Journal of Economic Education*, Spring 2000, 179-84.
- Mixon, F. G., Jr., Laband, D. N. and Ekelund, R. B., Jr. Rent Seeking and Hidden In-Kind Resource Distortion: Some Empirical Evidence. *Public Choice*, February 1994, 171-85.
- Rasmusen, E. *Games and Information*. Oxford: Basil Blackwell Ltd, 1991.
- Schindler's List*. 2 Tape (VHS) set, 3 hrs., 17 minutes, MCA Universal Home Video, Inc., 1994.
- Tinari, F. D. and Khandke, K. From Rhythm and Blues to Broadway: Using Music to Teach Economics. *Journal of Economic Education*, Summer 2000, 253-70.
- Trandel, G. A. Using a TV Game Show to Explain the Concept of a Dominant Strategy. *Journal of Economic Education*, Spring 1999, 133-40.
- von Neumann, J. and Morgenstern, O. *The Theory of Games and Economic Behavior*. NY: Wiley, 1944.
- Weigelt, K. and Camerer, C. Reputation and Corporate Strategy: A Review of Recent Theory and Applications. *Strategic Management Journal*, September/October 1988, 443-54.