Crowd of Soweto students protest Afrikaans in 1976

Game theory Analysis of the Soweto Uprising

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Ethnic tensions between black Africans and white Afrikaners have long defined South African history. After coming to power in 1948, the Dutch Afrikaner government pursued policies of extreme ethnic nationalism to ensure that the white elite maintained control over state power. The policies enacted by the Dutch Afrikaner government were distinctly anti-black African, maintaining exclusivity and power through intolerance and exclusion of black Africans from government and society. As a result, race dictated all aspects of life in South Africa.

Once members of the Afrikaner government took office, they were not shy about their intentions to create a divided society. The ultra-nationalist legislation began with the Population Registration Act of 1950, which "established mechanisms for determining and registering the race of all South Africans" by organizing all members of society into one of three classifications: "white," "colored," or "native."[1] To ensure the legitimacy of their legislation, the government issued identification cards featuring the assigned race of the individual. This measure was just the beginning of the discriminatory Apartheid legislation that the Afrikaner government passed and acted as the basis for later legislation. "In order to put this system of classification into practice, the government needed to institute an easy method of identifying South Africans by race at any time and in any place: hence the creation of passes."[2] The pass laws required black Africans to have specific legal documents in order to enter designated "white" areas, a measure which the black community strongly resisted.

A year after the Afrikaner government took power, the African National Committee, led by Nelson Mandela and his constituents, began to challenge the ultra-nationalist government through non-violent means, using boycotts, strikes, and civil disobedience to demonstrate their discontent. The government repressed the non-violent Defiance Campaign, which involved enormous rallies and "stay-at-homes" in 1952. As South Africa increasingly

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became a police state, the state banned leaders and newspapers and arrested roughly 8,500 individuals.[3] Despite the aggressive response from the Afrikaner government, dissatisfied individuals flocked to join the African Nationalist Committee, and Mandela represented many who were willing to face violence, imprisonment, or death for their beliefs. In March of 1960, the Pan-Africanist Congress led a campaign against Apartheid pass laws. One of these demonstrations took place in Sharpeville, where individuals protested outside a police station and met police violence. By the time the firing ceased, 69 were killed and more than 180 were wounded.[4] Although international denunciation of Apartheid policies already existed, the police repression at the Sharpeville Massacre sharply increased worldwide criticism. The United Nations Security Council and governments around the globe harshly criticized the South African government's police actions and racially prejudiced policies.[5] By the 1970s, a generation of Bantu educated students, led by Stephen Biko, committed to the realization that "Apartheid held no benefits for them, and they were being 'brainwashed' into thinking that they were inferior, lesser human beings."[6] This mentality developed into the Black Consciousness Movement, which would "demand for an educational system that was representative of Africa

Matrix I		Bantu Students *Protest?*	
		Yes	**No**
Afrikaner	Yes	T,T	W,W
Police *Use force?*	No	S,B	B,S

	Outcome
B	Best
S	Second
T	Third
W	Worst

Figure 1

and Africans."[7] The development of this movement was the driving force behind the uprising in Soweto.

The dissatisfaction with the Bantu education system culminated into the Soweto uprising. In 1974, a provision of the Bantu Education Act required that, rather than teaching entirely in English, education would be divided equally between English and Afrikaans. Not only were Afrikaans known as the language of the oppressor, but schools lacked the teachers and textbooks in Afrikaans to meet the requirements of the provision.[8] The South African Students Movement Action Committee developed from the Black Consciousness Movement and began organizing class boycotts.[9] In June 1976, hundreds of Soweto school students gathered to protest peacefully. As the protesters marched, Afrikaner police officers met them with violence. The police received instructions to "maintain order at all costs."[10] Despite mixed reports, it appears that the police threw tear gas at the students, who responded by throwing stones and bottles, and, as a result, the police opened fire.[11] Other residents soon joined the demonstrators, and the residents responded to the police's excessive use of force by destroying local government buildings. The Soweto uprising demonstrated a much more radicalized youth population and inspired many students and parents to join the fight against Apartheid.[12]

The Matrix

The standoff between the Afrikaner police and the Bantu student protesters provides an opportunity for game theory analysis; the need to understand not only one's own preferences, but the preferences of the opposition takes on a very important role in the Soweto uprising. Matrix I demonstrates the Afrikaner police's perception of a strategic approach. On one hand, students have the choice to protest or not to protest while the police must decide whether or not to use force in response to protestors' actions. It is, however, much more complicated than simply choosing yes or no. Each side has preferences that influence their strategic decision-making that must be taken into account.

The preferences of the police are relatively easy to determine as they were sent to Soweto under direct orders to maintain order at all costs. The best outcome for the police is to maintain the status quo. Here, for the protesters to choose not to protest, the police do not need to use force. In this scenario, the police would respond to protests in

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Soweto but their presence would not stop the protest. There is no threat to the Afrikaner power and no lives would be lost on either side. If neither side chooses to engage, no fuel is added to the fire of the African Nationalist Committee or the Black Consciousness Movement. In the second-best outcome, students choose to protest, but police presence sufficiently keeps the protesters in line. In an atmosphere of extreme ethnic tension, the police know that to use force would likely result in less order than if they simply discourage demonstrators with barricades or an ominous police presence. Unlike the best option where the police presence stops protests entirely, protests continue but are orderly due to fear in this outcome. From the perspective of the Afrikaner police, the third best outcome would be highly undesirable for both sides, as the students would choose to protest, and the police would subsequently use force to maintain order. In this case, the peaceful protesters may respond to the use of police force by reciprocating violence, creating strong potential for a bloodbath. Even if the police are able to quell the supposed uprising, the casualties could potentially ignite further racial tensions and worsen international relations. The worst outcome for the police would be for the protesters to cease protesting and for the police to fire on them anyway. Using force on civilians unengaged in protest would be a nightmare for the Afrikaner government, as they would likely face heightened ethnic tensions in the form of more violent protests, increased international denunciation, and a crumbling reputation as an authority.

When crafting their strategy, the Afrikaner police should have spent just as much time thoroughly considering the Bantu students' preferences as they did their own. From the Afrikaner police's understanding, the best possible outcome for the demonstrators would be to protest without encountering the use of force from the police. Here, the students would be allowed to express their grievances in a peaceful yet orderly way and avoid the loss of young life. The second-best outcome for the Bantu students, according to the Afrikaner police's view, would be to maintain the status quo. The young protestors would rather endure educational changes in silence than risk the potential violence that could come out of a massive protest. The third best option for the students would be to protest, but be met with violence. They would have the opportunity to express their grievances at a cost. Their own lives or those of friends or siblings could be taken as the police attempt to end the rebellion

freely. Thus, the police acting first results in the outcome (S, B). If the students act first, they would choose "yes," so the police would choose "no," leading to the same outcome (S, B). In Matrix I, sequence does not affect the likely outcome.

The second cut analysis of the matrix seeks to find other possible outcomes that are less stable than the likely outcome, but could potentially be obtained through the use of a strategic move. Again, for Matrix I, the likely outcome is (S, B). The police, however, are unsatisfied with this outcome, and instead seek to obtain the coveted best outcome (B, S). The police also have the potential to obtain the outcome (B, S) through a combination of strategic moves. The Afrikaner police understand the students' preferences to indicate that they would rather maintain the status quo than be fired upon, so the policemen have the opportunity to make a threat. The police could threaten to open fire on the protesters unless they choose "no" and stop protesting. The threat by itself, however, would be insufficient to obtain the desired (B, S). Assuming that the students give in to the threat and choose "no" and the police subsequently stop firing, the students have incentive to begin protesting again. Thus, in addition to the threat of force, the police must make protest leaders promise to maintain their choice of "no" to ensure that the protests have stopped for good and will not begin again.

While all strategic moves maintain credibility throughout the second cut analysis, the third cut analysis examines the credibility of those moves in the context of the real event, where external forces are actively involved. In order for a strategic move to work, it must be convincing, and in the case of multiple strategic moves, each must be made sufficiently credible. In the case of the Afrikaner police, their matrix suggests that in order to change their desired outcome from (S, B) to (B, S), they would have to establish credibility in both their threat and in their promise. First, the police must threaten the Bantu students that they will use force unless the protesters stop the demonstration. Due to their violent track record, the police would have little difficulty establishing the credibility of their threat. During Apartheid, the Afrikaner government put into effect a police state in which extreme and arbitrary use of violence was commonplace. The police reaction to the Sharpeville Massacre, roughly fifteen years prior to the Soweto uprising, demonstrates a reputation for following through on past threats and a readiness to use force to subdue protesters. The credibility of the second part of the strategic move, the promise, would be much more challenging to establish. Even with the credible threat established, in order to complete the strategic move, the Bantu students would have to promise not to start protesting again and switch back to their best outcome (S, B). This is a rather precarious situation to be in, as the police would have just threatened to kill the

South Africans holding "Stop Police Terror" banner while listening to speaker during second Communist meeting

and guarantee a return to order. Finally, the worst outcome for the Bantu students would be to choose not to protest, but still endure the use of force from the police officers. In that outcome, the students would not have the opportunity to voice their dissatisfaction, and lives would be lost due to the excessive and arbitrary use of power by the Afrikaner police.

Three Cuts of Analysis

The organization of potential outcomes into preferences allows for the next stage of game theory analysis, the decision-making process. The first cut of game theory analysis involves determining dominant strategies, likely outcomes, equilibria, and sequences for Matrix I. In Matrix I, both the Afrikaner police and the Bantu students have a dominant strategy, meaning that between the choices "yes" and "no," they both have one option that will always lead to a better outcome than the other option. For the police, the dominant strategy is to choose "no." The dominant strategy for the students is to choose "yes." Assuming that both sides act simultaneously, they would both use their dominant strategy, making the likely outcome (S, B). Thus, the cell (S, B) is the only cell in equilibrium because neither the police nor the students have incentive to change their dominant strategy. The sequence in which the actors choose also plays a significant role in predicting outcomes in a game theory matrix, as on occasion, better outcomes become available by going against the dominant strategy. If the police act first, they would choose "no," not to use force, so the students would choose "yes" and protest

	Bantu Students	
Matrix II	*Protest?*	
	Yes	**No**
Afrikaner **Yes**	T,S	W,T
Police *Use force?* **No**	S,B	B,W

	Outcome
B	Best
S	Second
T	Third
W	Worst

Figure 2

students, but now would ask something of them. From the police's understanding of the other side's preferences, the students would rather maintain the status quo than run the risk of slaughter. So, the students would make the promise not to protest based on their own will to survive. In this situation, however, the police would get the opportunity to see how accurately they prioritized the outcomes of their opponents. It would be very likely that the pull of (S, B) would be significant enough to motivate the students to begin protesting. If the students switched back to "yes," there would be a significant chance that the police would begin firing as a demonstration of power, resulting in the outcome (T, T).

Conclusion

The historical outcome of the confrontation between the Afrikaner police and the Bantu students was that both sides chose "yes" and violence ensued. Matrix I demonstrates the Afrikaner police's understanding of the situation and preferences, but it appears that the Afrikaner police and the Bantu students were not playing the same game. Matrix II demonstrates the Bantu students' understanding of the same situation. In Matrix II, the police have a dominant strategy to choose "no," and the students have a dominant strategy to choose "yes." Therefore, the cell (S, B) is the likely outcome, and is the only cell in equilibrium in the matrix. For sequence, if the police go first, they would choose "no," so the students would choose "yes," resulting in the outcome (S, B). If the students go first, they would choose "yes," so the police would choose "no" and the result would be (S, B). Thus, sequence does not matter. Unlike Matrix I, the police have no strategic moves in Matrix II.

A comparison of Matrix I with Matrix II reveals that both sides understood the preferences of the police to be the same, but the police erred in their organization of the students' preferred outcomes. The police's understanding shown by Matrix I indicates that the students would rather maintain the status quo than face violence, but this was not the case. Indeed, for their protest to be met with violence (S) was preferable to no protest at all (T). Heavily influenced by the Black Consciousness Movement, students were tired of the inferior life they had been taught to accept. Based on the experience of the protesters at the Sharpeville Massacre, the students likely knew that what began as a peaceful protest could potentially, and likely would, escalate into something far more violent and destructive. Since they underestimated the strength of the Black Consciousness Movement, the police failed to understand that for the students, "no" was simply not an option. The dissatisfied students had essentially burned bridges and completely disregarded the idea of stopping their protests, reducing the matrix to just two squares (T, S and S, B) rather than four. This also suggests that in terms of the students' preferences, (B) and (S) were not very far apart, and that the possibility to move from (B) to (S) was neither devastating nor unexpected.

As mentioned previously, the likely outcome of Matrix II is (S, B), which matches with what happened historically in the early stages of the uprising. When the police arrived, they attempted to barricade the students' path to deter protests. When the students rearranged their path and continued their march, the police began to surround the students and contain the protest. There were, however, roughly 10,000 students who participated in the march. The sheer number of protesters and the crowd's irate chants likely made the police feel extremely vulnerable and

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as though they maintained little control over the situation. According to reports, the police initiated the violence, throwing tear gas on the crowds without warning. Despite their initial peaceful efforts, the students responded to the gas by throwing stones at the police who this time responded with bullets.[13] As they attempted to maintain order at all costs, it is likely that the police quickly realized that their presence was simply not enough to dissuade the protesters from continuing. After coming to that realization, the police had to weigh the potential costs and benefits of allowing the protests to continue as they were (S) or to heighten their attempts to deter the protests and restore order (T). Since they could not be certain that the protesters would stop the demonstration as soon as the police added force to the equation, the police would have to put themselves in an even more vulnerable position. The police ultimately decided to take the risk and opened up a can of worms by shifting to (T, S).

By throwing tear gas, the police committed themselves to their third best outcome and experienced severe consequences. Media coverage of the police attacks featuring images of slaughtered schoolchildren resulted in uproar both at home and abroad. Three days after the uprising, the United Nations Security Council passed Resolution 392, condemning Apartheid as a "crime against the conscience and dignity of mankind [that] seriously disturbs international peace and security."[14] The Soweto uprising provides an excellent example of the need to properly understand preferences of both sides in order to accurately predict the outcome and plan an effective strategy. Even with correct predictions, potent external forces can change the nature of the matrix and must be thoroughly considered.

Police officers hold back dogs from crowd of protestors against Minister Piet Koornhof