Essays on bargaining and strategic communication

de Groot Ruiz, A.W.

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Strategic Communication

This thesis develops and tests game theoretic models of communication and bargaining. These models can be used to analyze strategic aspects of negotiations, such as those that arise between managers and workers, divorcing spouses or political parties. While the foundations may be somewhat technical, the essence can often be captured by a simple example. If you want to experience strategic communication, try your hand at the setting below during the public exposé of this thesis. (You can contact the author at adrian@degrootruiz.nl for questions.)

Do it yourself

You play Thomas, a mathematician from New York, who visits the village of Tamamdrés, along the beautiful coast of Oaxaca (México). Tamamdrés is surrounded by five beaches, all a kilometer apart from each other. Fallen in love with the place, you have decided to open a surf resort at one of the beaches.

You want to maximize your resort’s earnings, but face the problem that you do not know where the surf is right. You have heard that there is one ‘surf beach,’ which provides a good surf, and that the other four beaches offer less reliable surf conditions. You do not know which one is the surf beach, but you believe it must be either the most western beach (a. Revolcadero) or the most eastern one (e. Positano). Both are equally likely to be the surf beach in your opinion. The closer your resort is to the surf beach, the better it is for your business. Your resort cannot be more than 2 km away from the surf beach, because otherwise not enough customers will show up.

So you decide to talk things over with the Mayor of the village, Don Miguel. He also happens to be the local surf expert and could tell you without a shadow of a doubt where the surf beach is. What is more, you need his permission to open your surf resort. However, you wonder how helpful Don Miguel will really be. Don Miguel wants to maximize the earnings of his village and faces the following dilemma. A surf resort at the surf beach will cost the village dearly, as tourists will stay away from the village center due to the distance, which is bad for local business. On the other hand, a successful resort closer to the village center would bring in loads of tourists, meaning booming business for his village. If Don Miguel does not give permission, nobody earns or loses money.

You can play this situation as follows with the person sitting next to you, who will play the role of Don Miguel. Both you and Don Miguel base the choices on the (same) table below.

1. You ask Don Miguel which beach is the surf beach.
2. Don Miguel gives you an answer (but beware, Don Miguel might not be completely honest...).
3. You choose at which beach you want to open your resort and you tell Don Miguel your choice.
4. Don Miguel decides whether or not to give you permission.

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**Expected annual earnings for resort and village (in millions of pesos $) depending on Thomas’s choice and Don Miguel’s information**

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<th>Location of surf beach known by Don Miguel</th>
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You, however, want to maximize the earnings of your village and face the following dilemma. You know the surf beach is . However, a surf resort at that place will cost the village dearly, as tourists will stay away from the village center due to the distance and force local businesses to close. On the other hand, a successful resort closer to the village center would bring in loads of tourists, meaning booming business for your village. Thomas needs your permission to open his surf resort. If you say no, nobody earns or loses money.

You can play this situation as follows with the person sitting next to you, who will play the role of Thomas. Both you and Thomas base the choices on the (same) table below.

1. Thomas asks you which beach is the surf beach.
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<td>-2</td>
</tr>
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<td>$20</td>
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<tr>
<td>Village resort</td>
<td>$0</td>
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