

Latent Semantic Analysis and the Semantic Representation of Politeness in Political Interaction

Abstract

This paper attempts to explore the semantic representation of politeness or the context-sensitive cognitive-based linguistic manifestation of social relationships (García-Pastor, 2006) in political debates of the 2000 U.S. elections. To this end, politicians' speech has been segmented into 'politeness units' (ibid.), i.e. juxtapositions of utterances constituting a coherent and identifiable chunk of talk by virtue of the overall function they perform in terms of 'face' or the self-image an individual wants for himself/herself in a specific society (Brown and Levinson, 1987). Such function primarily consists of the speaker's attention to, or damage of, the hearer's face giving place to politeness units of the 'mitigating' and 'aggravating' kinds respectively. In order to examine the semantic links between these units in ongoing talk, the method of Latent Semantic Analysis (LSA) has been deployed here. Results showed that politeness or the linguistic enactment of social bonds has a specific semantic representation in the debates under study, and that there is a significant relationship between the type of politeness unit produced by a candidate at a determinate interactional moment, and the semantic content of speech.

Keywords: Politeness, Political debates, LSA, Semantic representation, Persuasion, Attack.

1. Introduction

In this paper, we start from the premise that social relations can only come into being in and through talk (cf. Duck, 1998), so that they are linguistically enacted by individuals in their communicative exchanges. The linguistic manifestation of social bonds in interaction has been referred to here as ‘politeness’ in tune with all the research on this phenomenon and related matters within the field of pragmatics. As a linguistic phenomenon which manifests itself in specific ways in determinate contexts, we believe that the semantic content of politeness must have a specific semantic representation in debates. The present study thus intends to examine such semantic representation in politicians’ interchanges in U.S. electoral debates, that is, the semantic representation of the linguistic instantiation of candidates’ social bonds in these events, in particular, the relationships between them, and the relation they establish with audience. Political debates have been deemed a highly suitable context for this purpose, since, on the one hand, politicians need to do a lot of relational work with the audience and try to maintain cordial relationships with one another for the sake of persuasion. On the other hand, they need to build persuasive arguments on semantic grounds at the same time.

In order to represent the semantic content of politeness in debaters’ talk, we have employed the method of LSA. LSA extracts, represents and compares the meaning of words or groups of words in the linguistic contexts where they are used by means of the statistical analysis of a considerable amount of information or ‘corpus’ (Landauer and Dumais, 1997; Landauer, Foltz and Laham, 1998). This method of analysis was considered greatly appropriate for the purpose of this study in light of its attested effectiveness in establishing and accurately predicting the semantic representation of texts in which the semantic similarity between textual

components was estimated (Landauer and Dumais, 1997), and textual coherence and changes in thematic content were measured (Foltz, Kintsch and Landauer, 1998).

2. Politeness and political debates

Politeness has generally been conceived as linguistic action in the field of pragmatics. Along these lines, politeness has been understood here as the linguistic enactment of social relations in and through talk (García-Pastor, 2006). Such linguistic enactment may reveal a harmonious or a hostile social bond depending on the speaker's positive or negative linguistic action towards the hearer's 'face' respectively. 'Face' in this paper amounts to the self-image an individual wants for himself/herself in a specific society (Brown and Levinson, 1987). The speaker's positive linguistic action or attention to the hearer's face has been referred to here as 'mitigation', whilst the speaker's negative linguistic action or damage of the hearer's face has been called 'aggravation'. Therefore, both mitigation and aggravation correspond to two main ways in which politeness is shaped in interaction constituting the two major varieties of a so-called 'politeness unit' in this study: juxtaposition of utterances compounding a coherent and identifiable chunk of talk by virtue of the global function they perform in terms of 'face' (García-Pastor, 2006).

In the context of electoral debates, mitigation tends to define those interventions politicians primarily direct to the audience, whereas aggravation frequently moulds their exchanges with the opponent. The participant category of 'audience' here includes the overhearing audience or viewers, the studio audience (if present at all), and the moderator(s) of the debates in hand in their condition as (a) potential voter(s) that need to be persuaded. Thus,

debaters usually deploy mitigation with the audience in order to build a positive relationship with it, so that they attain its persuasion. Consequently, mitigation is the expression of persuasion par excellence in these events (ibid.). Concerning aggravation, politicians normally use it to attack the opponent, in such a way that they express their antagonistic relation with him/her. In any case, and as established in the literature, mitigation abounds in the peripheral sections of debates, that is, those sections closer to the opening and closing of a debate such as the introduction and the conclusion, whilst aggravation is present in the central sections, especially those in which politicians are allowed to address one another directly.

3. Method

3.1. Sample

The sample analysed in this research includes a total of 37 thematic sections compounding 2 debates of the 2000 U.S. presidential elections, which constitute the corpus of this study (2 hours and 30 minutes of ongoing talk). The unit of sampling has been the 'section', i.e. a specific period of interaction entailing questions from the moderator(s) or the candidates on a determinate topic, and the latter's responses to these questions. Topics in the sample are multiple and varied ranging from international issues to national matters. Although sampling was not random, hence results cannot be generalized, it was systematic: the sample contains sections of debates between Republicans on the one hand, and Democrats on the other hand.

3.2. Variables and design

The sections in the sample were segmented into politeness units of the mitigating (MIT) and aggravating (AGGR) kinds as already pointed out. Semantic links between consecutive units of these kinds in interaction were established resulting in four types of binary sequences: MIT-MIT, MIT-AGGR, AGGR-MIT, AGGR-AGGR. For each sequence type a measure of semantic similarity was obtained. Therefore, this study involves a '4'-type design with one factor corresponding to the sequence of politeness units (SPUs), and one dependent variable consisting of the semantic link for each sequence.

3.3. Procedures and instruments

The segmentation of politicians' talk into politeness units (MIT or AGGR), was realized according to the following criteria: a) effect on the hearer's face, b) presence of linguistic expressions, vocatives and the like, and discourse markers indicative of topic shift, and c) reactions from the studio audience (if present), the moderator(s) and/or the opponent. These criteria systematically pointed to the beginning or end of a politeness unit (cf. García-Pastor, 2006). The analysis of the semantic links between units was performed using Latent Semantic Analysis (LSA). LSA represents words as vectors in a 'semantic' space, and calculates their semantic links mathematically. The measure of a semantic link is the value of a cosine between vectors ranging from 0 — or sometimes negative-but-near-to-0 values — to +1, which corresponds to the most intense link. We have used the LSA engine developed at Boulder (<http://lsa.colorado.edu/>) in its version of consecutive 'sentence to sentence comparison' and 'General reading up to 1st year college-300 factors' corpus to calculate the cosines. The statistical analyses have been performed with the SPSS 14.0. software.

4. Results and discussion

The mean values (and standard deviations) of the LSA cosines for each of the 4 types of SPUs are the following: MIT-MIT: 0,46 (0,18); MIT-AGGR: 0,32 (0,19); AGGR-MIT: 0,39 (0,16); AGGR-AGGR: 0,27 (0,20). In all cases, the values indicate that an important semantic link between consecutive politeness units in every topic section of the debates ensues. In other words, politicians are coherent in their talk, as they tend to use the same words with the same meanings to build their arguments in the conversation. Therefore, there are no prominent thematic cuts within the sections of a debate, which yields considerable semantic links in LSA terms. The above results also show that links between two mitigating units are stronger than links between aggravating units. A possible explanation for this may be found in the idea that persuasion requires argumentative development of the topic under discussion as opposed to aggravation or attack.

Taking the type of SPU as a 4-level factor, we carried out an ANOVA analysis, which has yielded significant global differences ($F= 11,774$; $MS= 0,400$; $df= 3$; $p< 0,001$). Post-hoc pair comparisons show significant differences between the MIT-MIT/AGGR-AGGR ($p< 0,001$), and MIT-MIT/MIT-AGGR ($p= 0,024$) pairs. There is also quasi-significant differences (near to the standard limit) between the AGGR-MIT/AGGR-AGGR ($p= 0,097$) pair. Politeness studies in general have evinced that aggravation or face attack is usually reciprocated, pans out in discourse, and tends to escalate (e.g. Culpeper et al., 2003). However, these studies are generally mute as regards mitigation. Out of the 165 binary sequences of politeness units constituting our sample, the majority are immersed in long sequential cycles of either

mitigation or aggravation. In fact, 3 of every 4 SPUs that begin with mitigation (aggravation) are followed by another mitigating (aggravating) unit respectively. Not surprisingly, the MIT-MIT sequence type amounts to a 40,6% of the total amount of sequences in our sample, and the AGGR-AGGR type corresponds to a 35,8%, both constituting a 76,4% of this total.

The sections in the analysed sample contain 112 mitigating units and 86 aggravating units altogether. The conditional probability that, given a mitigating unit, the following one is also mitigating, is 60% as opposed to a 17% conditional probability that the unit that follows is aggravating, and a 23% conditional probability that no unit at all follows because the section has finished. As for aggravation, the conditional probability that, given an aggravating unit, the following one is also aggravating is even greater (69%) in comparison with a 23% conditional probability that the unit that follows is mitigating, and an 8% conditional probability that no other unit follows whatsoever. Therefore, the MIT-MIT and AGGR-AGGR sequence types work as ‘attractors’ in an electoral debate. As already stated, there are clear significant differences between these two sequence types, which implies that the semantic link between mitigating units, whereby a speaker aims at the audience’s persuasion, is significantly different from the semantic link between aggravating units, through which a speaker intends to attack the hearer. Before a mitigating unit deployed by a candidate for persuasion, the next speaker in the conversation usually reacts addressing the audience persuasively as well by re-taking and developing the topic under discussion. This accounts for the considerable shared semantic content between consecutive mitigating units and the high value of the LSA cosine. Before an aggravating unit normally directed to the opponent, the next speaker in the conversation

usually responds with aggravation in order to attack the latter, which neither requires topic re-taking nor elaboration of any sort. This explains the lesser shared semantic content between aggravating units in contrast with mitigating ones, and the lower value of the LSA cosine.

Additionally, the results of the comparison of pairs realized, suggest the possibility that type of unit that is first in the sequence has some effect in the way politeness is semantically represented in the debates with the same applying to the type of unit that is second therein. To confirm this hypothesis post-hoc, a second ANOVA analysis with two factors — type of initial unit X type of final unit — was performed (ANOVA 2X2). When a mitigating unit is first in a sequence, the average of the LSA cosines thereto is 0,39; however, when an aggravating unit is the first, the average of LSA cosines in the sequence is 0,33. On the other hand, when the final unit in a sequence is mitigating, the average of the LSA cosines is 0,43; however, if the final unit is aggravating, the average value of the cosines decreases to 0,30. The ANOVA analysis shows that the type of initial unit in a sequence produces differences that reach a significance near to the standard limit ($F= 3,538$; $MS= 0,120$; $p= 0,06$), whilst the type of final unit produces clear significant differences ($F= 14,380$; $MS= 0,487$; $p< 0,001$). There is no interaction effect between the two factors. Again, it is observed that mitigating after any previous politeness unit entails a stronger semantic link with such unit than aggravating. The almost significant effect of the initial unit in a sequence indicates that mitigation will share greater semantic content with the following unit than aggravation.

6. Conclusions

In this preliminary study on the relationship between the phenomenon of politeness in the field of pragmatics, and semantics in interaction, our hypothesis that politeness in the context of electoral debates has a specific semantic representation has been confirmed. It is in this light that different types of politeness units, more specifically, mitigating and aggravating units, deployed by candidates to persuade the audience and attack the opponent respectively, are linked semantically in a different way. This also corroborates on semantic grounds the findings of politeness investigations which show that politeness manifests itself in specific ways across discourse types or contexts. Moreover, this study supports the conclusions of some of these investigations as regards the nature of aggravation in discourse, whilst providing further information on the essence of mitigation thereto, at least as far as the context of electoral debates is concerned. At present, we are working towards increasing the representative character of the sample and the overall power of the study in order to strengthen its external and internal validity. All in all, we believe this research has modestly contributed to shed some light into a) the link between issues of semantics and pragmatics as the pragmatic phenomenon politeness is, b) the connection between semantics and spoken language, and c) politeness phenomena in context.

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