

Copyright

by

Deepashree Ajit Athle

2006

The Dissertation Committee for Deepashree A. Athle certifies that this is the approved version of the following dissertation:

Shooting the Messenger:
Ironic Effects of Imbalance in
Anti-drug Messages from Celebrities

Committee:

Carson B. Wagner, Co-Supervisor

William B. Swann, Jr., Co-Supervisor

Rebecca S. Bigler

Randy L. Diehl

Sriram Kalyanaraman

Jane M. Richards

Shooting the Messenger:
Ironic Effects of Imbalance in
Anti-drug Messages from Celebrities
by
Deepashree Ajit Athle, B.Sc., M.A.

Dissertation

Presented to the Faculty of the Graduate School of
the University of Texas at Austin
in Partial Fulfillment
of the Requirements
for the Degree of
Doctor of Philosophy

The University of Texas at Austin

December, 2006

To my family

Acknowledgments

I thank deeply everyone who has, whether directly or indirectly, made this possible. Carson Wagner, Bill Swann, Clarke Burnham, Randy Diehl, Rebecca Bigler, Sriram Kalyanaraman, Jane Richards, Carla Criner, Josh Holahan, Arnold Buss, Pat Carroll, Deborah Stote, Bob Josephs, Mamma, Pappa, Gouree and Amit, Carla Criner, Mirage Thakar, Priya Bellare Prakash, Deepali Watson, Neha Bhatt Patel, Katie McCall, Anjana Singhal, Richard Kuo, Angus and Gunther, Logi, and others who have helped me grow. Thank you.

By virtue of the timeframe--the framework of cognitive consistency abounded in the 1950s and 1960s--their methodology has relied almost exclusively on self-reports. While self-report measures are helpful, they are also susceptible to such artifacts as demand characteristics (Orne, 1962), evaluation apprehension (Rosenberg, 1969), situational norm confounds (Dovidio & Fazio, 1991; Fazio & Towles-Schwen, 1999), and impression management (Tedeschi et al., 1971) despite promises of anonymity (Fazio, 1986). In the late 1980s and early 1990s, there were significant development of indirect measures in social cognition research (e.g., Jacoby, Lindsay, & Toth, 1992; Schacter, 1987) based on which useful alternatives that provide access to a cognitive domain not reached by self-report measures began to surface (Bargh, 1997; Fazio, Jackson, Dunton, & Williams, 1995; Greenwald & Banaji, 1995). These measures were initially developed to alleviate the problem of obtrusive measures in stereotyping research, but given that the similar problems beleaguer other areas of research as well, Greenwald, McGhee, and Schwartz's (1998) Implicit Association Test (IAT) has been adapted to measure implicit attitudes to concepts such as illicit drugs (Wagner, 2001).

More generally, Strength of Association (SOA) measures the ease with which a psychological connection is made between the concept being tested and both positivity and negativity, without asking respondents overt questions about their attitudes. In so doing, implicit attitude measures reduce the chances that

measures. However, three participants made errors of more than three digits, on more than one "telephone number". The data from those was discarded, due to doubts about the manipulation having worked for these participants. Of the remaining participants, those that viewed the commercials under high motivation and high opportunity reported a mean motivation of 4.20 ($s=.72$) and mean perceived opportunity of 4.65 ($s=.58$) as compared to those who watched with low motivation and low opportunity, who reported a mean motivation of 2.46 ($s=.51$) and mean perceived opportunity of 1.72 ($s=.65$). These were two items (see Appendix E) on a scale from 1 (not at all) to 5 (lots). As expected, those that processed the messages centrally reported greater motivation [$t(77)=-12.36$, $p<.01$] and higher perceived opportunity [$t(77)=-21.23$, $p<.01$] in watching the commercials than those that processed the messages peripherally.

3.3. *Post-hoc Tests*

Post-hoc tests were generally conducted only if the F test associated with the interaction was significant. In the case of SOA however, a post-hoc investigation was undertaken despite the absence of an interaction, so as to not obscure an existing effect. Tests for the homogeneity of variance were conducted for each one-way ANOVA conducted to compare means. If the Levene statistic corresponded to a p -value less than 0.05, homogeneity of variance was not assumed. In addition, the existence of unequal cell sizes was considered. Based on these facts, the Brown-Forsythe statistic was used to test the overall model

(i.e., to determine whether at least one mean was significantly different from others), and the Games-Howell statistic was determined to be the appropriate adjustment for multiple comparisons within the model (i.e., to determine which of the four means were different). See Seaman, Levin, and Serlin (1991) and Toothacker (1996) for more details about the Brown-Forsythe and Games-Howell statistics and their use in dealing with heterogeneity of variance.

3.4. *Dependent Measures*

3.4.1. *Strength of Association.*

To calculate SOA, the total score from the Marijuana-Negative phase was subtracted from the total score of the Marijuana-Positive phase to form an SOA difference score. It should be noted that the more negative the SOA difference score, the relatively more marijuana-negative associations than marijuana-positive associations, and the more anti-marijuana the individual.

SOA scores were then entered as a dependent variable into a two-way ANOVA crossing state of balance and type of processing. The interaction was not significant [$F(1,75)=.38, ns$] and the main effects were analyzed. In support of H2, it was found that those in the condition of balance (low marijuana appeal, high celebrity appeal) showed a mean SOA of -5.60 ($s=3.93$) while those in the condition of imbalance (high marijuana appeal, high celebrity appeal) showed a mean SOA of -3.52 ($s=3.63$). The difference in SOA was significant [$F(1,75)=7.43, p<.01$] implying that those who were in a state of balance had more anti-

marijuana SOA than those who were in a state of imbalance. In support of H3, it was found that those who processed messages centrally showed a mean SOA of -3.70 ($s=2.89$) while those who processed messages peripherally showed a mean SOA of -6.00 ($s=4.51$). The difference in SOA was significant [$F(1, 75)=9.52$, $p<.01$]. Hence, both hypotheses related to this dependent measure (see Figure 2) were supported.

To further investigate differences between conditions, a one-way ANOVA was used to compare means. The Levene statistic (.01) was under 0.05 and so equal variances could not be assumed. The Brown-Forsythe statistic (3, 57.69) had a value of 4.46 which corresponded to $p<.01$, implying an overall significant difference between the four means compared. On examination of the error plot of means with 95% confidence intervals, it was noted that confidence limits did not overlap with means, and so it is fair to assume that the samples were drawn from populations with different means. Since neither the variances nor the sample sizes were equal, multiple comparisons based on the Games-Howell statistic are reported (see Table 3 for mean differences, standard errors, and p-values). The only significant difference (see Figure 2) was that the mean SOA of those who were in the balance + peripheral condition ($M=-6.63$, $s=5.10$) was more anti-marijuana than the mean SOA of those who were in the imbalance and + central condition ($M=-2.07$, $s=3.15$). There were also marginally significant differences ($p=.07$ for both) between the SOA of 1) those that were in the balance + central

condition ($M=-4.56$. $s=2.37$) and those that were in the imbalance + central condition, and 2) those that were in the imbalance + central condition and those that were in the imbalance + peripheral condition ($M=-5.18$. $s=3.59$).

3.4.2 Change in Celebrity Appeal.

The celebrities were initially conceived as belonging to one of two groups: relevant (those appearing in the stimuli--Andy McDonald, Williams sisters, and Dixie Chicks) and irrelevant (those not appearing in the stimuli--Eminem, Britney Spears, and Lance Armstrong). Owing to the unfamiliarity of majority of respondents to Andy McDonald, the groups were now as follows: popular celebrity spokespersons (Williams sisters and Dixie Chicks), a previously unknown celebrity spokesperson (Andy McDonald) and irrelevant celebrities (Eminem, Britney Spears, and Lance Armstrong). Celebrity appeal was measured twice, first in pre-screening (pre-commercial appeal of various celebrities) and then at a point after viewing the commercials (post-commercial appeal of various celebrities).

Difference scores were calculated by subtracting the mean pre-commercial appeal from the mean post-commercial appeal, averaged over the Williams sisters and Dixie Chicks, and averaged over the range of irrelevant celebrities. A negative number indicates that the appeal of the celebrity fell from pre-commercial to post-commercial reporting; a positive number indicates that the

appeal of the celebrity rose from pre-commercial to post-commercial rating. For Andy McDonald, there existed only one (post-commercial) rating of appeal.

Popular Celebrity Spokespersons. There was a significant baseline difference (see Table 2) in the pre-commercial attitude to the Williams sisters, with those in the state of balance self-reporting higher pre-commercial appeal ($M=4.54$, $s=.46$) than those in the condition of imbalance ($M=4.15$, $s=.64$); $t(77)=3.14$ and $p<.01$.

However, since change in celebrity appeal was represented by a difference score for each participant, these particular analyses were immune to these baseline differences. Also, when averaged over both popular celebrities, there were no baseline differences in pre-commercial appeal for popular celebrities; $t(77)=-1.38$, *ns*. The relevant difference scores were submitted in to a 2X2 factorial ANOVA to examine the effect of interaction between the state of balance and type of processing on change in celebrity appeal regarding the celebrities that were initially well-liked and in the commercials. The interaction (see Figure 3) was significant [$F(1,75)=4.13$, $p<.05$], and there was one main effect such that those in a state of balance ($M=.14$, $s=.46$) reported less change in appeal of celebrities involved [$F(1,75)=6.20$, $p<.05$] than those in a state of imbalance ($M=-.19$, $s=.79$). Hence, H1a was supported. In the condition of balance, the mean change in celebrity appeal after peripheral processing was .06 ($s=.44$) while the mean change in celebrity appeal after central processing was .19 ($s=.48$). In the condition of imbalance, on the other hand, while the mean change in celebrity

appeal after peripheral processing was, like the rest, negligible ($M=.01$, $s=.63$), the mean change in celebrity appeal after central processing was $-.44$ ($s=.92$). In order to complete testing of H4a, the four means were compared using a one-way ANOVA. The overall model was significant, with a Brown-Forsythe statistic ($3, 40$) = 3.28 ($p<.05$), but multiple comparison tests based on the Games-Howell statistic showed that only one difference approached significance ($p=.09$). This marginal significance can be interpreted as there being somewhat of a greater change (decrease) in appeal of the popular celebrity spokespersons ($M=-.42$, $s=.23$) for those in the imbalance + central condition, as compared to the change in appeal (increase) of popular celebrity spokespersons for those in the balance + central condition ($M=.21$, $s=.10$). Hence H4a, according to which, among those in a state of imbalance, those who processed the message centrally would show a greater decrease in appeal as compared to those who processed the messages peripherally, was not supported. However, it should be noted that the only group who showed any decrease in appeal of the popular celebrity spokespersons whatsoever was those in the imbalance + central condition (see Figure 3).

Unknown Celebrity Spokesperson. Since the celebrity was unknown to all participants, only a post-commercial appeal score was available for this celebrity. Although this eliminated the possibility for investigating change in attitude, submitting the relevant difference scores in to a 2X2 factorial ANOVA did offer

the opportunity to examine the effect of interaction between the state of balance and type of processing on the first impression made by an erstwhile unknown celebrity with an anti-marijuana message. In the condition of imbalance, the mean post-commercial score after peripheral processing was 3.98 ($s=.80$) while the mean post-commercial score after central processing was 3.86 ($s=.64$). In the condition of balance, on the other hand, the mean post-commercial score after peripheral processing was 3.97 ($s=.80$) while the post-commercial score after central processing was 4.41 ($s=.61$). There were no main effects but the interaction approached significance [$F(1,75)=3.12, p=.08$] (see Figure 4). Since the interaction was not significant, no post-hoc tests were performed.

Irrelevant Celebrities. These were included to test whether or not participants would derogate or boost the specific celebrities in the commercials or just all celebrities in general. No significant change in attitude was found for the irrelevant celebrities. This shows that source-derogation was restricted to celebrity spokespersons and not all celebrities in general.

3.4.3 *Counter-argument.*

This dependent measure, like celebrity appeal scores, was on a 5-point scale with lower scores indicating less counter-argument of the anti-marijuana messages and higher scores representing more counter-argument of the anti-marijuana messages. There was a significant interaction effect [$F(1,75)=6.54, p>.05$] of balance versus imbalance and type of processing on counter-argument

(see Figure 5). Of those in a state of balance, the level of counterargument had a mean of 2.61 ($s=.41$) for the peripheral processing condition and a mean of 2.45 ($s=.51$) for the central processing condition. However, of those in a state of imbalance, the level of counterargument had a mean of 2.80 ($s=.54$) for the peripheral processing condition and a mean of 3.30 ($s=.79$) for the central processing condition. There was no main effect of type of processing but there was a significant main effect of balance [$F(1,75)=5.91, p<.05$] such that those who in a state of imbalance counter-argued the messages more than those in a state of balance. Hence H1b was supported.

To test H4b, the counter-argument scores was submitted to a one-way ANOVA and means were compared. The Brown-Forsythe statistic (3, 37) = 2.64 approached significance ($p=.06$), but there were no significant differences between any means based on the Games-Howell statistic. So, of the pro-marijuana, or rather those in a state of imbalance, the ones who processed messages peripherally did not counter-argue the messages significantly less than the ones who processed messages centrally. Hence, H4b was not supported.

The 8 items of the counter-argument questionnaire were submitted to a principal components factor analysis employing a varimax rotation. Three components with eigenvalues greater than 1 were obtained and they accounted for 63.86% of the total variance. The first factor (on which items 1-4 loaded) had an eigenvalue of 2.8 and accounts for 35.12% of the variance; the second factor

(on which items 5-6 loaded) had an eigenvalue of 1.27 and accounts for 15.86% of the variance; and the third factor (on which items 7-8 loaded) had an eigenvalue of 1.03 and accounts for 12.88% of the variance. The reliability of the scale was assessed by obtaining a Cronbach's alpha which had a satisfactory value of .71. On considering the content of individual items, the first factor appears to be related to explicit attitudes towards the celebrities in the commercials (see items 1-4 on Appendix F). The second and third factors were determined to be distinct by the factor analysis, but they both appear to be related to advertisers (see items 4-8 on Appendix F), and were hence combined for further analyses.

The two factors were hence conceptualized to be: 1) explicit attitudes towards celebrities, and 2) explicit attitudes towards advertisers. The counter-argument scores for each factor were submitted to a 2X2 ANOVA. Both factors showed the same pattern of results as did overall counter-argument. There was a significant main effect such that those in a state of balance showed significantly less counter-argument ($M_1=2.39$, $s_1=.71$; $M_2=2.67$, $s_2=.40$) than those in the state of imbalance ($M_1=2.97$, $s_1=.81$; $M_2=3.09$, $s_2=.86$); $F_1(1,75)=5.17$, $p_1<.05$; $F_2(1,75)=10.03$, $p_2<.01$. Also, there was a significant and marginally significant (respectively) interaction effect between the state of balance and type of processing, in line with the pattern of results for overall counter-argument (see Figure 5), on both the counter-argument of the spokesperson ($[F_1(1,75)=5.17$, $p_1=.03]$) and the advertisers [$F_2(1,75)=3.56$, $p_2=.06]$].

3.4.4 *Change in Appeal of Marijuana.*

An Appeal of Marijuana difference score index was computed to represent the change in the extent to which participants' found marijuana to be desirable from pre-commercial to post-commercial viewing. Change in Appeal of Marijuana was calculated by subtracting post-commercial appeal of marijuana from the pre-commercial appeal of marijuana, for each participant. Both measurements were on a 5-point scale, so the more negative the difference score, the greater the self-reported decrease in appeal of marijuana. The difference scores thus obtained were entered as dependent variables into a 2X2 factorial ANOVA to test for the interaction effect of state of balance and type of processing on change in appeal of marijuana. The interaction was not significant, but the main effect for state of balance was significant [$F(1,75)=11.89, p<.05$] with participants in a state of imbalance reporting greater decrease in appeal of marijuana ($M=.37, s=.52$) than those in a state of balance reporting lesser decrease in appeal of marijuana ($M=.04, s=.29$). The main effect of type of processing approached significance [$F(1,75)=3.36, p=.07$] with those that processed messages peripherally reporting greater decrease in appeal of marijuana ($M=.25, s=.36$) than those who had processed messages centrally ($M=.07, s=.47$).

When post-hoc tests were conducted, the one-way ANOVA rendered a Brown Forsythe statistic $(3, 34) = 4.34; p < .01$. Multiple comparison tests (see Figure 6) revealed that the mean representing the greatest decrease in appeal for

marijuana ($M=-.45$, $s=-.39$), belonged to those in the imbalance + peripheral condition. It was significantly different from the decrease in marijuana appeal for both those in the balance + peripheral condition ($M=-.10$, $s=.24$) and those in the balance + central condition ($M=.02$, $s=.33$), but not different from those in the imbalance + central condition ($M=-.23$, $s=.62$).

In order to compare post-commercial SOA and post-commercial self-reported attitude towards marijuana, consider Figure 7. Although no statistical comparisons were made, it is interesting to note that the SOA and self-reports were commensurate in all groups except for viewers in the imbalance + peripheral condition. Although these viewers – like those in the imbalance + central condition – self-reported high post-commercial appeal for marijuana, their SOA showed more similarity with viewers in a state of balance, and appeared less pro-marijuana than the SOA of viewers in the imbalance + central condition.

3.5. Ceiling and Floor Effects.

These effects only apply to the relevant within-subjects dependent variables – change in appeal of popular celebrities and change in appeal of marijuana, since eligibility for the experiment was partly based on pre-commercial attitudes towards marijuana (high or low appeal) and popular celebrities (high appeal) held for participants (see Table 2).

The objection that some of the null results were due to ceiling effects could hence be raised; for example, since all participants found the celebrities highly appealing before they viewed the commercials, perhaps they could not report any greater appeal for the celebrities after viewing the commercial because of the restriction of range imposed by the 5-point scale used. With respect to the change in appeal of popular celebrities and on examination of Figure 1, it is clear that the restriction of range imposed by the 5-point scale did not affect the hypotheses tested. For example, reconsidering H1a and H4a in this light, reveals that there was no problem of restriction of range for these hypotheses, since the appeal scores were expected not to increase but to decrease. As mentioned above, the other objection that could be raised concerns the change in appeal for marijuana; for example, there was a main effect for state of balance with participants in a state of imbalance, who reported a greater decrease in appeal of marijuana, than those in a state of balance, who reported a lesser decrease in appeal of marijuana. However, this could be a floor effect, given that those in a state of balance reported a very low pre-commercial for marijuana ($M=1.18, s=.27$). There were no specific hypotheses regarding change in appeal of marijuana, but this is clearly a problem in terms of interpreting this data. More specifically, the decrease in appeal shown by those in the balance + peripheral condition could have been artificially restricted by scale, and so the data on change in appeal of marijuana must be interpreted with caution when considering viewers in a state

of balance. Floor affects do not apply within the state of imbalance – for instance, when comparing the effect of message processing style on marijuana appeal in pro-marijuana viewers – since they report high pre-commercial appeal for marijuana.

Chapter 4

Discussion

Various hypotheses were supported, while others were not, which raises both theoretical and methodological implications and questions. They will be addressed after a brief discussion of the results associated with each dependent measure.

4.1. *Strength of Association*

Viewers were categorized as being in a state of balance if they reported high celebrity appeal for known celebrities and low appeal for marijuana prior to testing in the laboratory. In comparison, viewers were categorized as being in a state of imbalance if they reported high celebrity appeal for known celebrities as well as high appeal for marijuana. Congruency or lack thereof, between the attitude towards marijuana and attitude towards anti-marijuana celebrities resulted in viewers who were in a state of balance showing more negative – or rather more anti-marijuana SOA – than viewers who were in a state of imbalance. Further, viewers who processed anti-marijuana message peripherally – or with low motivation and opportunity – had more anti-

marijuana SOA than viewers who processed anti-marijuana messages centrally – or rather with high motivation and high opportunity. This is a replication of Wagner and Sundar’s (2003) findings indicating that viewing anti-drug ads less actively leads to more negative SOA than viewing ads effortfully. Finally, although there was not a significant interaction between balance and processing style, it is interesting to note that the most pro-marijuana SOA belonged to the group of viewers who were in the imbalance + central condition.

4.2. *Celebrity Appeal*

The three groups of celebrities rated were as follows: popular (two sets of celebrities for whom participants reported high appeal) celebrities, an unknown celebrity (one that all participants reported being unfamiliar with), and irrelevant celebrities (those not featured in the anti-marijuana messages used as stimuli in the experiment). The effects on each type of celebrity are discussed below. Each celebrity was rated once before and once after the experimental manipulation, based on which difference scores indicating change in appeal were calculated. The unknown celebrity was rated only once, following the experimental manipulation.

The results show that those in a state of imbalance showed greater decrease in the appeal of initially popular celebrities than those in a state of balance. It was clear that the difference in attitude towards marijuana affected dynamically the way celebrities featured in the anti-marijuana messages were

perceived; anti-marijuana viewers tended to report finding these celebrities as or slightly more appealing after the anti-marijuana message, pro-marijuana viewers reported liking these celebrities significantly less after the anti-marijuana message. It was hypothesized that of those in a state of imbalance, those that process messages centrally would show greater decrease in celebrity appeal than those who processed messages peripherally. While this hypothesis was not supported, it was shown that the only group who reported a decrease in appeal of the celebrities was those in a state of imbalance who processed messages centrally and that this difference was marginally different from those that were in a state of balance and processed messages centrally. Finally, with respect to this measure, the possibility of the ceiling effect mentioned earlier is not particularly worrying, given that the effect is not accentuated by the ceiling effect, but in fact curbed by it, and should be addressed in future studies more carefully.

The unknown celebrity yielded interesting if not solid results. The interaction between balance and processing style on post-commercial appeal approached significance. The pattern of results aligns with the change in appeal of popular celebrities in that, for those who processed messages peripherally, there seemed to be no difference in the rating of this erstwhile unknown celebrity based on the state of balance or imbalance. However, when the messages were processed centrally, those in a state of balance (self-reportedly anti-marijuana

viewers) tended to report greater appeal for this celebrity than those in a state of imbalance (self-reportedly pro-marijuana viewers).

It could be surmised that the derogation of celebrities by pro-marijuana viewers who processed messages centrally was a result of an overall “negative halo effect” in line with research on frustration-aggression and scapegoating (see Dollard, Doob, Miller, Lowrer, & Sears; 1939 and Miller & Bugelski, 1948) created by receiving messages that create a state of imbalance. However, no significant change of appeal was reported in the context of celebrities uninvolved in the anti-marijuana messages, and so the derogation of celebrities can be seen as specific to the celebrities in the commercials. This gives credence to the idea that it is the specifically the celebrity messenger who creates a state of imbalance that is metaphorically shot.

4.3. *Counter-argument*

This measure captured the overall degree of derogation, differentiation, denial, refutation and concept boost that the viewers engaged in after receiving the anti-marijuana messages from celebrities. Those viewers that were in a state of balance showed lesser counter-argument than viewers that were in a state of imbalance. The interaction between balance and processing style was significant although post-hoc tests revealed no significant differences between four groups. Even so, the pattern observed was that when viewers were in a state of balance, or rather anti-marijuana to begin with, the processing style made little difference

to the level of counter-argument. When viewers were in a state of imbalance, or rather pro-marijuana to begin with, they seemed to counter-argue messages more when their processing style was central than when their processing style was peripheral. This finding supports prior research showing that counter-arguing may be the most effortful of all cognitive responses to counter-attitudinal messages. Distracting people from making counter-arguments, can increase persuasion (Osterhouse and Brock, 1970), which is what seems to have occurred in those viewers who processed messages peripherally.

4.4. *Marijuana Appeal*

Attitude towards marijuana were reported twice, once before and once after the experimental manipulation, and change in appeal was based on the difference between these two measurements. Those who were in a state of imbalance reported a somewhat greater decrease in appeal for marijuana than those in a state of balance. It should be noted that no hypotheses were generated for this particular measure, in addition to the fact that this result should be interpreted with caution – it may reflect floor effects, based on the fact that anti-marijuana viewers reported being more anti-marijuana than pro-marijuana viewers reported being pro-marijuana. It is interesting that--even though this difference was not statistically significant--of those in a state of imbalance, viewers who processed anti-marijuana messages peripherally reported a greater decrease in marijuana appeal than viewers who processed messages centrally.

Although viewers in a state of imbalance who processed messages peripherally self-reported the greatest decrease in appeal for marijuana, the post-commercial appeal for marijuana was still high for these viewers. To explore the relationship between SOA and self-reports, the two measures were informally compared (see Figure 7). It was observed that SOA scores for these viewers were more comparable to SOA scores of those in a state of balance, and not with the SOA scores of those in a state of imbalance that processed messages centrally, as suggested by the post-commercial self-reported appeal for marijuana. This underscores the importance of including both implicit and explicit measures, for a clearer picture, especially when studying attitudes towards controversial concepts.

4.5. Summary

In summary, the results obtained supported most of the hypotheses. H1 and H2 pertained to the effects of balance on change in celebrity appeal and counter-argument, and were fully supported. Based on the first two hypotheses, it can be stated that those viewers who were in a state of imbalance at the outset (high celebrity appeal, high marijuana appeal) attempted to resolve the imbalance by greater decrease in the appeal of featured celebrities, and greater counter-argument of the message, compared to those viewers who were in a state of balance at the outset (high celebrity appeal, low marijuana appeal). H3 related to the effect of processing style on SOA, and was supported as well.

Based on this hypothesis, Wagner and Sundar's findings were replicated, and it was found that those viewers who employed a peripheral processing style (low motivation, low opportunity) would have more anti-marijuana SOA compared those viewers who employed a central processing style (high motivation, high opportunity), regardless of a pre-existing state of balance or imbalance. H4 was relevant to the differential effect of processing style on viewers who were in a state of imbalance. Although neither part of this last hypothesis was statistically supported, the pattern of results obtained aligns well with results expected – those that were in a state of imbalance did tend to show a greater decrease in appeal of celebrities and more counter-argument when the processing style was central as opposed to peripheral.

4.6. *Limitations and Suggestions for Future Research*

Participants were classified as belonging to a state of balance or imbalance based on self-reported attitudes towards marijuana. This may seem antithetical to the idea that both implicit and explicit measures are important to assess, but was done because of a practical issue – many eligibility criteria were necessary to test the hypotheses in this study, which led to a very low ratio of prescreened participants to eligible participants. It would have been impossible to pre-screen participants using the SOA measure, hence self-reports alone were used. Given that that only highly pro- and highly anti-marijuana subjects were chosen for this study, and that there was more than a two-week gap in explicit assessment of

appeal for marijuana, all the steps necessary to enhance sensitivity of self-report measures were undertaken. However, in future studies, it would be prudent to administer the SOA measure twice.

Inclusion of an SOA measure in pre-screening would also make possible investigation of SOA change (see Wagner & Sundar, 2003) – an important aspect of measuring concept boost. For example, this study measures well the derogation of the celebrities, but the nuanced possibilities of concept boost (with respect to marijuana) and differentiation, denial, and refutation (with respect to the featured celebrities) are lumped in to one measure (counter-argument). Of all these, it is important that concept boost be more thoroughly assessed owing to its ironic effects, which would necessitate administration of the SOA measure twice, both before and after the manipulation, as suggested above.

In addition to investigating change in SOA, it would also benefit this area of research to include measures of how appealing viewers found the featured commercials. This becomes especially important when commercials do not feature celebrities. Not all public communication features celebrities; the principle of balance, however, may apply even when there are no pre-existing attitudes towards the spokesperson. Maintenance of original attitudes, in the absence of source derogation, may be accomplished by derogation of attributes of the commercial (for example, the featured person/s, visuals, jingles, or context selected for execution of the idea).

It may be the case that the type of messages presented in these three commercials, in particular, were conducive to counter-argument. McGuire and Papageorgis (1961) found that a two-sided appeal would be superior to a one-sided appeal in reducing resistance to a counter-communication attacking a belief prevalently and strongly held by a message recipient. All the messages presented in these commercials were one-sided, which serves as a precautionary note about how the results obtained in this study may be affected by attributes particular to these commercials, and it would be wise to include other types of messages from celebrities in future studies.

Finally, a larger, non-student sample would inspire more confidence in the generalizations drawn here, and would perhaps have found significant differences where this research did not. Also, the number of ads, and the number of viewers was small. These limitations are not crippling however, and the fact that this study found significant differences, despite the small number of participants, speaks well for the effect size.

4.7. *Implications*

Cialdini (1997) offers examples of how close communication between advertisers and social scientists leads to the creation of effective public service communication. The present research serves to underscore that notion.

Advertisers – especially those involved in public service communication – seem aware that their audience is comprised of “cognitive misers” (Fiske and Taylor,

1984), and spend millions of taxpayers' dollars to create hard-hitting campaigns that "grab" the viewer. However, this research demonstrates that the creation of ads that encourage central processing may have unintended effects of derogation of the celebrity spokesperson, and boosting of the attitude that the advertiser seeks to change, in an effort by the viewer to resolve the imbalance created by the message. This is especially so if the message is highly counter-attitudinal for the viewer, and signals the need for market segmentation, even when the communication is not-for-profit. This study suggests that social marketers need to be sensitive to the diversity within target populations and the concurrent need to allocate scarce resources—especially in the case of public service communication—effectively. These comprise some of the practical applications of this research.

Methodological implications of this study involve the use of implicit measures, initially developed to be relatively straightforward substitutes for explicit measures. However, studies indicated that the relations between implicit and explicit measures were often very weak (e.g., Wittenbrink, Judd, & Park, 2001). Researchers first assumed that this was because the explicit measures allowed for the possibility of deception, but later investigators (see Wagner, 2003) have suggested that measures like SOA do more than just sidestep the methodological pitfalls of explicit measures—they tap in to automatic attitude activation that affects behavioral decision-making. In this study, both SOA and

self-reports were included. A time lag between administrations of self-reports helped to increase their sensitivity, and they clearly yielded data that was valuable, especially on comparison of results from the SOA measure with corresponding results from self-reports. It is hence suggested that researchers pay more attention to the reasons behind the debate raging between proponents of implicit and explicit measures (see DeCoster, Banner, Smith, & Sevin; 2006), and attempt to include both types of measures in their studies.

This research also has theoretical implications. Balance theory has unfortunately been relegated to the status of somewhat of a relic in the past couple of decades. A few social scientists (see Greenwald et al, 2002; and Woodside and Chebat, 2001) have offered rationales for why it has not spawned new research in recent times, and have called for the resurrection of this traditional theory, based on its widespread applicability to social perception, attribution, attitude change, communication, interpersonal attraction, and group formation. Greenwald et al have indicated that there has been unresolved competition between its theoretical avatars like congruity theory, symmetry theory, and dissonance theory (see Rodrigues and Newcomb, 1980) but that the underlying principle of balance, on which they are based, cannot be contested. The present study, like a few other studies (see Russell and Stern, 2006; Crimmins and Horn, 1996; and Woodside, 2004) seeks to re-initiate balance

theory in to social psychology, and foster its application in public communication.

Table 1. Number of Participants per Cell.

	Peripheral Processing	Central Processing	<i>Totals</i>
Balance	23	27	50
Imbalance	16	13	29
<i>Totals</i>	39	40	<i>N=79</i>

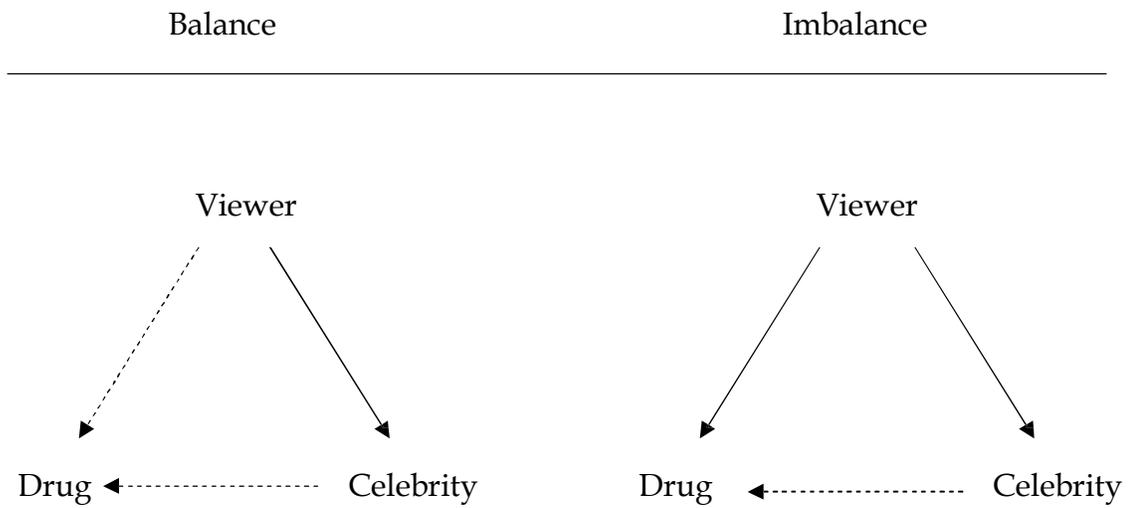
Table 2. Pre-commercial Appeal of Marijuana and Relevant Celebrities.

	Pre-commercial Appeal			
	Marijuana	Williams sisters	Dixie Chicks	Andy McDonald
Balance	1.18 (.27)	4.54 (.46)	4.19 (.81)	Unknown
Imbalance	3.90 (.63)	4.15 (.64)	4.22 (.70)	Unknown

Table 3. Multiple Comparisons of Mean Difference in SOA.

	Mean Difference	Standard Error	Games- Howell Statistic
<hr/>			
Imbalance + Peripheral			
Balance + Peripheral	-1.46	1.39	.72
Balance + Central	-.60	.99	.93
Imbalance + Central	-3.11	1.21	.07
<hr/>			
Balance + Peripheral			
Balance + Central	-2.06	1.18	.32
Imbalance + Central	-4.57*	1.38	<.01
<hr/>			
Imbalance + Central			
Balance + Central	2.51	.96	.07
<hr/>			

Figure 1. The States of Balance and Imbalance in this Study.



Solid and dashed lines indicate positive and negative attitudes respectively.

Figure 2. The Effect of Congruity and Processing Style on SOA.

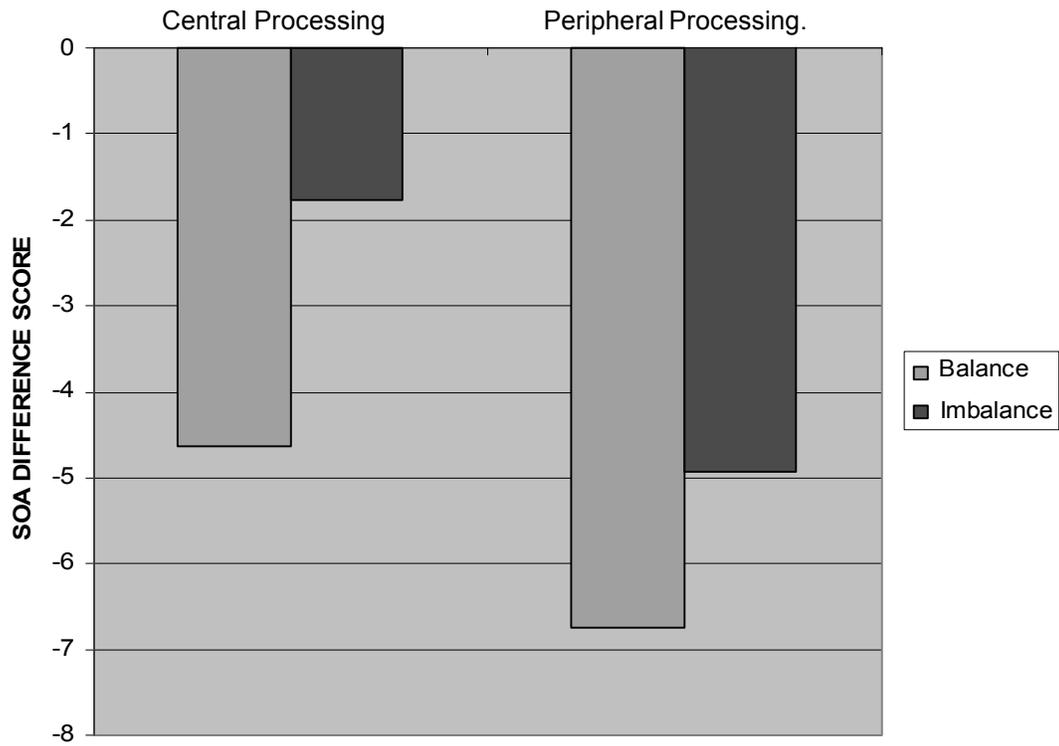


Figure 3. The Effect of State of Balance and Processing Style on Change in Appeal of Popular Celebrity Spokespersons.

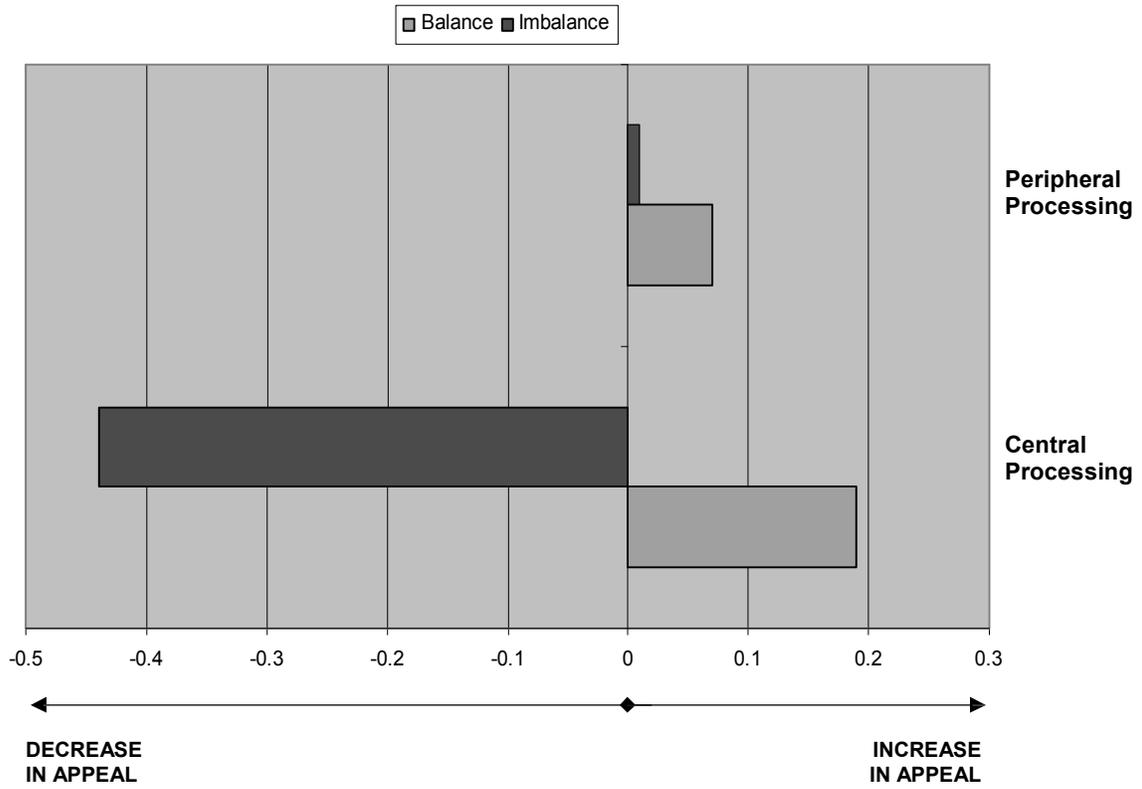


Figure 4. The Effect of State of Balance and Processing Style on Post-commercial Appeal of Unknown Celebrity

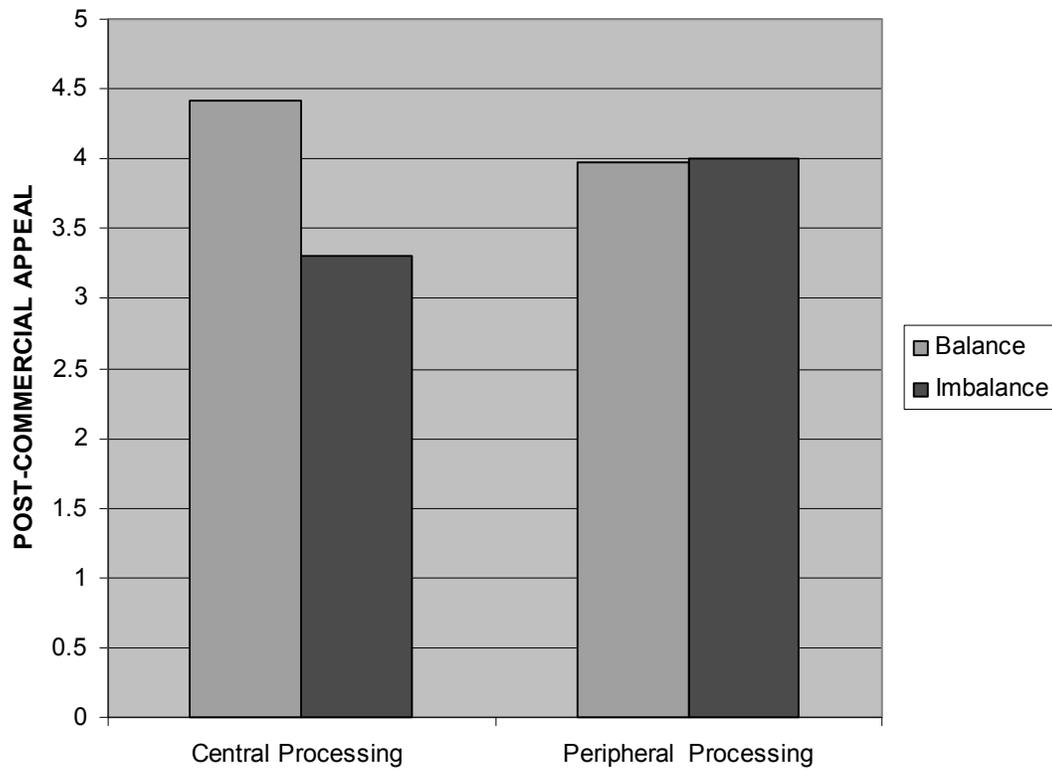


Figure 5. The Effect of State of Balance and Processing Style on Counter-argument.

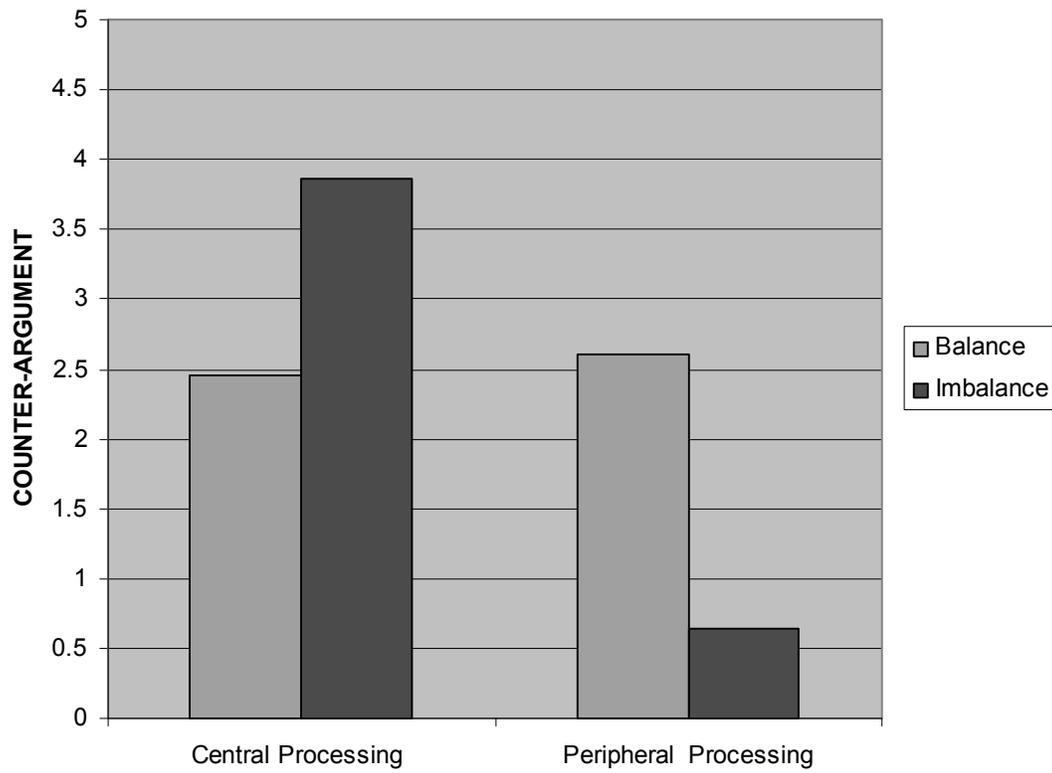


Figure 6. The Effect of State of Balance and Processing Style on Change in Appeal of Marijuana.

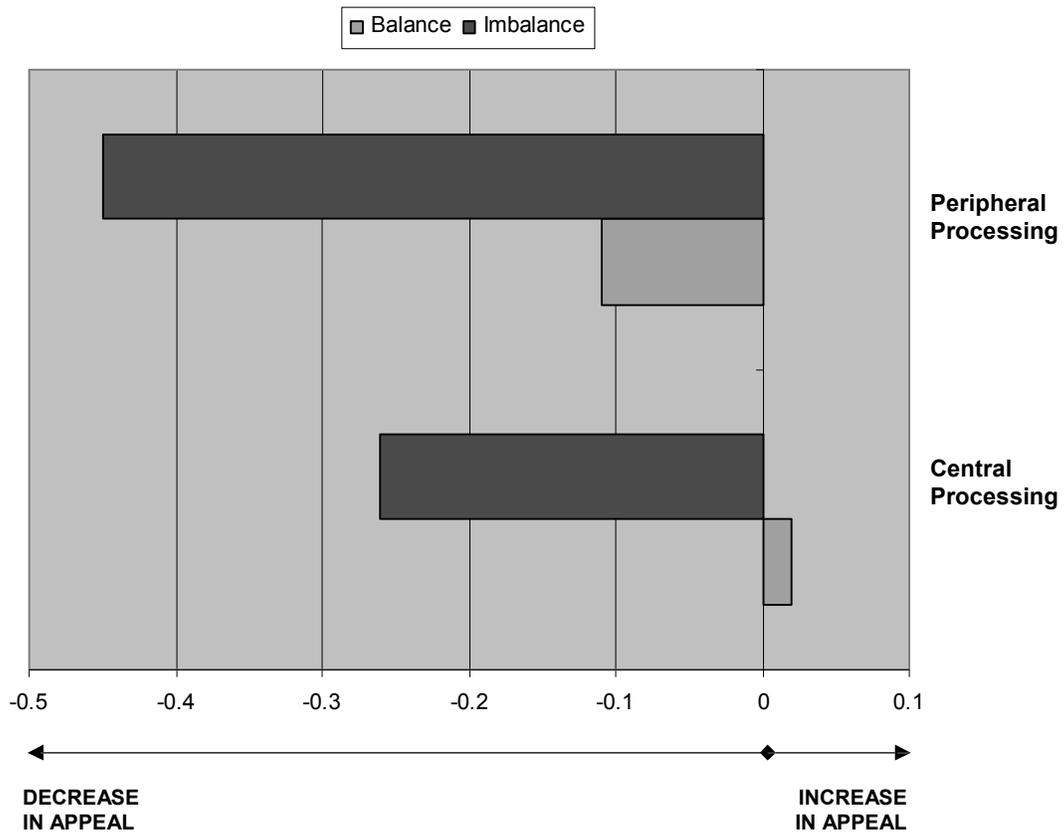
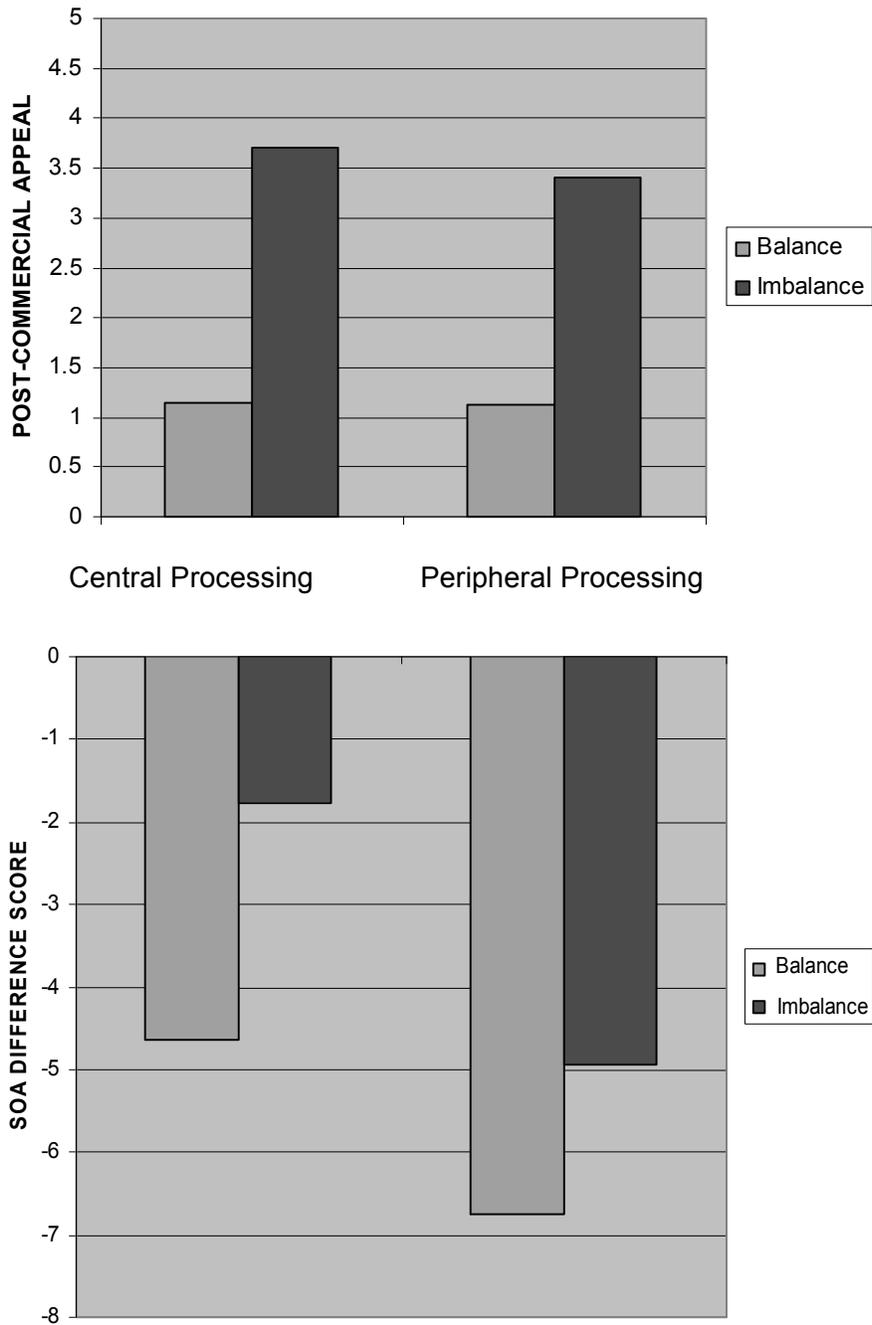


Figure 7. The Comparison between Post-commercial Appeal for Marijuana and Post-commercial SOA.



Appendix B

Celebrity Appeal

Please circle the number that best indicates how you feel.

1) Andy McDonald is:

1 ----- 2 ----- 3 ----- 4 ----- 5
Favorable Unfavorable

1 ----- 2 ----- 3 ----- 4 ----- 5
Good Bad

1 ----- 2 ----- 3 ----- 4 ----- 5
Pleasant Unpleasant

1 ----- 2 ----- 3 ----- 4 ----- 5
Acceptable Unacceptable

1 ----- 2 ----- 3 ----- 4 ----- 5
Cool Uncool

1 ----- 2 ----- 3 ----- 4 ----- 5
Worthwhile Worthless

2) Serena and Venus Williams are:

1 ----- 2 ----- 3 ----- 4 ----- 5
Favorable Unfavorable

1 ----- 2 ----- 3 ----- 4 ----- 5
Good Bad

1 ----- 2 ----- 3 ----- 4 ----- 5
Pleasant Unpleasant

1 ----- 2 ----- 3 ----- 4 ----- 5
Acceptable Unacceptable

1 ----- 2 ----- 3 ----- 4 ----- 5
Cool Uncool

1 ----- 2 ----- 3 ----- 4 ----- 5
Worthwhile Worthless

3) The Dixie Chicks are:

1 ----- 2 ----- 3 ----- 4 ----- 5
Favorable Unfavorable

1 ----- 2 ----- 3 ----- 4 ----- 5
Good Bad

1 ----- 2 ----- 3 ----- 4 ----- 5
Pleasant Unpleasant

1 ----- 2 ----- 3 ----- 4 ----- 5
Acceptable Unacceptable

1 ----- 2 ----- 3 ----- 4 ----- 5
Cool Uncool

1 ----- 2 ----- 3 ----- 4 ----- 5
Worthwhile Worthless

4) Lance Armstrong is:

1 ----- 2 ----- 3 ----- 4 ----- 5
Favorable Unfavorable

1 ----- 2 ----- 3 ----- 4 ----- 5
Good Bad

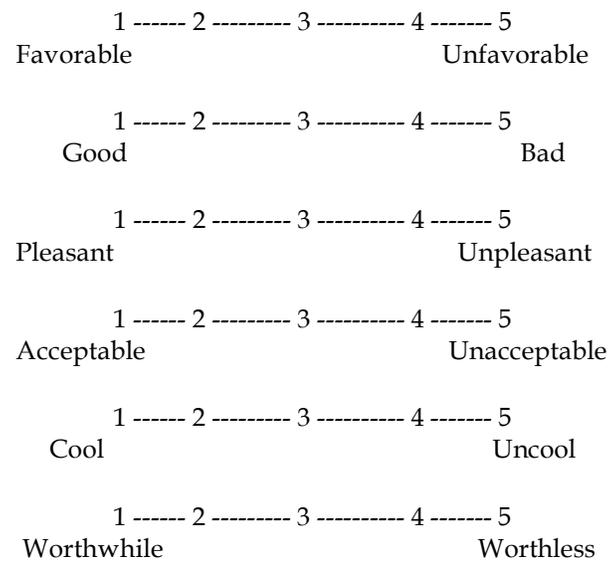
1 ----- 2 ----- 3 ----- 4 ----- 5
Pleasant Unpleasant

1 ----- 2 ----- 3 ----- 4 ----- 5
Acceptable Unacceptable

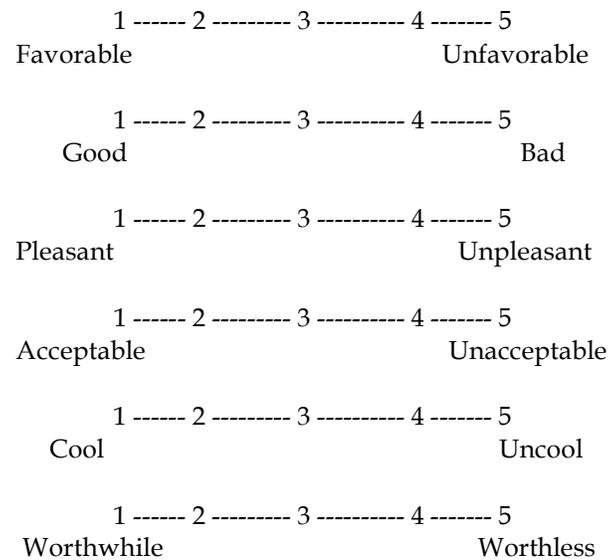
1 ----- 2 ----- 3 ----- 4 ----- 5
Cool Uncool

1 ----- 2 ----- 3 ----- 4 ----- 5
Worthwhile Worthless

5) Eminem is:



6) Britney Spears is:



Appendix C

Stimuli

“Andy MacDonald” (TV spot; 30 seconds)

This ad centers around professional skateboarder Andy MacDonald describing his job. In it, he explains that getting to the place he is in his career takes a lot of motivation, hard work, and dedication. Further, he says that he has been riding for thirteen years, and that it took him six years just to “learn to skate.” He claims that there are boarders out there who are just as talented as any athlete in any professional sport and that, no matter who it is, wiping out on a skateboard is part and parcel of the experience. As he speaks, several shots of him doing stuntwork, both on pavement and on a half-pipe, are shown in quick procession, shot from oblique angles and tinted in various bright colors. Towards the end of the spot, he admits that drugs “will only slow you down” and that he couldn’t do what he does if he took drugs. The commercial ends with Andy stating “that, right there, is my idea of getting high” as viewers are shown a shot of him flying off the end of a half-pipe.

“Serena and Venus Williams” (TV spot; 30 seconds)

This ad centers around Serena and Venus Williams, two professional tennis stars. As the commercial opens, Serena explains that “As a kid, I remember dreaming of becoming the best.” The spot then cuts to Venus saying “Of course, I do more than dream – I also make plans.” Venus then explains that she is always working hard at becoming better, looking for new plateaus to which to raise her abilities. The PSA then cuts back to Serena stating “I don’t have to mess around with the drugs, ‘cause I know that it’s not good for me...it’s not good for anything that I do.” The images that compose the ad are quickly cut close-ups of various body parts of the two female athletes juxtaposed with medium range shots of each of them talking. The commercial closes with Serena stating “Drugs kill dreams – it’s just not worth it,” and finally, the ad ends with a shot of the two laughing as we hear one of them say “It’s your choice. You just have to make the best one.”

“Dixie Chicks” (TV spot; 30 seconds)

This PSA begins with the Dixie Chicks, an all-female alternative rock band, introducing themselves and describing themselves as being “dorks” in their youth. The three band members then go on to discuss being victims of peer pressure at a young age, but that having a creative outlet such as music allowed them to overcome bad influences from their cohort. They say that that time was among the hardest in their lives, but that it is also the time when one discovers his or her talents and passions. Throughout the discussion, the ad quickly cuts back and forth between shots of the conversation (shot in black and white) and stylized concert footage. The commercial ends with one of the band members stating “I couldn’t imagine [living out my dreams] with something like drugs hanging over my head” in a voice-over.

Appendix D-1

The four lists of words included in the SOA Measure.

COLORS DRUG-RELATED

YELLOW	MARIJUANA
GREEN	HASH
RED	REEFER
PINK	POT
BLUE	BUD
BROWN	MARYJANE
ORANGE	WEED
PURPLE	GANJA

positive

negative

acceptable

unacceptable

worthwhile

worthless

good

bad

excellent

horrible

pleasant

unpleasant

favorable

unfavorable

cool

uncool

awesome

awful

Appendix D-2

Critical Task for Marijuana-Positive Associations.

MARIJUANA or *positive*

COLOR or *negative*

YELLOW
acceptable
MARIJUANA
horrible
HASH
good
PINK
unacceptable
POT
uncool
BLUE
excellent
BUD
bad
MARYJANE
pleasant
BROWN
cool
ORANGE
favorable
WEED
unfavorable
RED
unpleasant
GREEN
worthwhile
REEFER
worthless
PURPLE
awesome
GANJA
awful

Appendix D-3

Critical Task for Marijuana-Negative Associations.

COLOR or *positive*

MARIJUANA or *negative*

BLUE
excellent
BUD
bad
MARYJANE
pleasant
BROWN
cool
ORANGE
favorable
WEED
unfavorable
YELLOW
acceptable
MARIJUANA
horrible
HASH
good
PINK
unacceptable
POT
uncool
RED
unpleasant
GREEN
worthwhile
REEFER
worthless
PURPLE
awful
GANJA
awesome

Appendix E

Manipulation Check

Please circle the number that best indicates how you feel.

1. How motivated were you to watch these commercials closely?

1 ----- 2 ----- 3 ----- 4 ----- 5

Not at all

Lots

2. How much opportunity did you have to watch these commercials closely?

1 ----- 2 ----- 3 ----- 4 ----- 5

Not at all

Lots

Appendix F

Counter-argument

Please fill in the response that best indicates how you feel.

1 ----- 2 ----- 3 ----- 4 ----- 5
Strongly disagree Strongly agree

1. I like these celebrities more after viewing the commercials. _____
2. I respect these celebrities more after viewing the commercials. _____
3. The celebrities believed what they said in the commercials. _____
4. The celebrities were in it for the money. _____
5. The celebrities are well qualified to be spokespersons. _____
6. These commercials are a fair representation of reality. _____
7. Advertisers understate the problem in commercials like these. _____
8. Advertisers overstate the problem in commercials like these. _____

References

Bargh, J. A. (1997). The automaticity of everyday life. In R. S. Wyer (Ed.), *Advances in social cognition* (Vol. 10, pp. 1-61). Mahwah, NJ: Erlbaum.

Brendl, C. M., Markman, A. B. & Messner, C. (2001). How do indirect measures of evaluation work? Evaluating the inference of prejudice in the Implicit Association Test. *Journal of Personality and Social Psychology*, 81, 760-773.

Cialdini, R.B. (1997). Professionally responsible communication with the public: Giving psychology a way. *Personality and Social Psychology Bulletin*, 23(7), 675-683.

Crimmins, James and Martin Horn (1996), Sponsorship: From Management Ego Trip to Marketing Success. *Journal of Advertising Research*, 36 (July-August), 11-21.

DeCoster, J.B., Banner, M.J., Smith, E.R., & Semin, G.R. (2006). On the inexplicability of the implicit: Differences in the information provided by implicit and explicit tests. *Social Cognition*, 24(1), 5-21.

Dollard, J., Doob, L.W., Miller, N.E., Mowrer, O.h., & Sears, R.R. (1939). *Frustration and aggression*. New Haven, CT: Yale University Press.

Dovidio, J. F., & Fazio, R. H. (1991). New technologies for the direct and indirect assessment of attitudes. In J. M. Tanur (Ed.), *Questions about Questions: Inquiries into the Cognitive Bases of Surveys*, pp. 204-237. New York: Russell Sage.

Fazio, R. H. (1986). *How do attitudes guide behavior?* In R. M. Sorrentino, & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (89-137). New York: Guilford Press.

Fazio, R. H. (1990). *Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework.* *Advances in Experimental Social Psychology*, 23, 75-109.

Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology*, 69, 1013-1027.

Fazio, R. H., Sanbonmatsu, D. M., Powell, M. C., & Kardes, F. R. (1986). On the automatic activation of attitudes. *Journal of Personality and Social Psychology*, 50 (2), 229-238.

Fazio, R. H., & Towles-Schwen, T. (1999). The MODE model of attitude-behavior processes. In S. Chaiken & Y. Trope (Eds.), *Dual-Process Theories in Social Psychology* (pp. 97-116). New York: Guilford.

Festinger, L., & Maccoby, N. (1964). *On resistance to persuasive communications.* *Journal of Abnormal & Social Psychology*, 68(4), 359-366.

Gaertner, S. L., & McLaughlin, J. P. (1983). Racial Stereotypes: associations and ascriptions of positive and negative characteristics. *Social Psychology Quarterly*, 46, 23-30.

Gilbert, D.T., & Hixon, J.G. (1991). *The trouble of thinking: Activation and application of stereotypic beliefs*. *Journal of Personality & Social Psychology*, Vol 60(4), 509-517.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4-27.

Greenwald, A.G., McGhee, D.E., & Schwartz, J.L. (1998). *Measuring individual differences in implicit cognition: The implicit association test*. *Journal of Personality & Social Psychology*, 74(6), 1464-1480.

Hawkins, S. A., & Hoch, S. J. (1992). Low-involvement learning: Memory without evaluation. *Journal of Consumer Research*, 19, 212-225.

Heider, F. (1946). *Attitudes and cognitive organization*. *Journal of Psychology*, 21, 107-112.

Heider, F. (1958). *The Psychology of Interpersonal Relations*. New York: Wiley

Jacoby, L. L., Lindsay, D. S., & Toth, J. P. (1992). Unconscious influences revealed: Attention, awareness, and control. *American Psychologist*, 47, 802-809.

Kamins, M.A., & Assael, H. (1987). Two-sided versus one-sided appeals: A cognitive perspective on argumentation, source derogation, and the effect of disconfirming trial on belief change. *Journal of Marketing Research*, 24(1), 29-39.

Lowery, B.S., Hardin, C.D., Sinclair, S. (2001). *Social influence effects on automatic racial prejudice*. *Journal of Personality & Social Psychology*, Vol 81(5), 842-855.

Meirick, P. (2002). Cognitive responses to negative and comparative political advertising. *Journal of Advertising*, 31(1), 49-62.

Miller, N.E., & Bugelski, R. (1948). The influence of frustrations imposed by the in-group on attitude expressed towards the out-group. *Journal of Psychology*, 25, 437-442.

Newcomb, T.M. (1956). *The Prediction of Interpersonal attraction*. *American Psychologist*, 11, 575-586.

Orne, M. T. (1962). On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. *American Psychologist*, 17, 776-783.

Osgood, C.E., & Tannenbaum, P.H. (1955). *The principle of congruity in the prediction of attitude change*. *Psychological Review*, 62, 42-55.

Osterhouse, R. A. and Brock, T.C. (1970). Distraction Increases Yielding to Propaganda by Inhibiting Counterarguing. *Journal of Personality and Social Psychology*, 15 (4), 344-58.

Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer.

Rodrigues, A., & Newcomb, T.M. (1980): The balance principle: Its current state and its integrative function in social psychology. *Interamerican Journal of Psychology*, 14(2), 85-136.

Rosenberg, M. & Abelson, R. (1960). *An analysis of cognitive balancing*. In Rosenberg et al. (Eds.) *Attitude Organization and Change*. New Haven: Yale University Press.

Rosenberg, M. J. (1969). The conditions and consequences of evaluation apprehension. In R. Rosenthal & R. L. Rosnow (Eds.), *Artifact in behavioral research* (pp. 279-349). New York: Academic Press.

Russell, C.A., & Stern, B.B. (2006). Consumers, Characters, and Products: A Balance Model of Sitcom Product Placement Effects. *Journal of Advertising*, vol. 35, no. 1 (Spring 2006), pp. 7-21.

Schacter, D. L. (1987). Implicit memory: History and current status. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13, 501-518.

Seaman, M.A., Levin, J.R., & Serlin, R.C. (1991). New developments in pairwise multiple comparisons: Some powerful and practicable procedures. *Psychological Bulletin*, 110, 577-586.

Severin, W.J., & Tankard, J.W. (1997). Cognitive Consistency and Mass Communication. *Communication Theories: Origins, Methods, and Uses in Mass Media*, 4th Edition, 159-177.

Solomon, M. R. (1999). *Consumer behavior* (4th ed.). Upper Saddle River, NJ: Prentice-Hall.

Tannenbaum, P.H., Macauley, J.R., & Norris, E.L. (1966). *Principle of congruity and reduction of persuasion*. *Journal of Personality & Social Psychology*, 3(2), 233-238.

Tedeschi, J. T., Schlenker, B. R., & Bonoma, T. V. (1971). Cognitive dissonance: Private ratiocination or public spectacle? *American Psychologist*, 26, 685-695.

Toothacker, Larry E. (1993). *Multiple comparisons procedures*. Thousand Oaks, CA: Sage Publications. Quantitative Applications in the Social Sciences series #89. Discusses multiple comparison tests, assumptions, power considerations, and use in two-way ANOVA. Good coverage of SAS and SPSS support for MCP's.

Wagner, C. B (2001). *Implicit attitudes and anti-drug PSAs: Automatic processes and unreasoned action*. Paper presented at the 84 annual conference of the Association for Education in Journalism and Mass Communication, Washington, DC.

Wagner, C.B (2003). *Anti-drug ads: Do traditional measures exaggerate their effectiveness?* Paper presented to the Advertising Division at the 86th annual conference of the Association for Education in Journalism and Mass Communication, July 2003, Kansas, MO.

Wagner, C.B, & Sundar, S. S. (2003) *Automatic activation of drug attitudes: Anti-drug ad viewing styles and strength of association*. Top Faculty Paper presented

to the Communication Theory and Methodology Division at the 86th annual conference of the Association for Education in Journalism and Mass Communication, July 2003, Kansas, MO.

Weber, S. J., & Cook, T. D. (1972). Subject effects in laboratory research: An examination of subject roles, demand characteristics, and valid inferences. *Psychological Bulletin*, 77, 273-295.

Wittenbrink, B., Judd, C. M., & Park, B. (2001). Spontaneous prejudice in context. Variability in automatically activated attitudes. *Journal of Personality and Social Psychology*, 81, 815-827.

Woodside, A.G. (2004). Advancing means-end chains by incorporating Heider's balance theory and Fournier's consumer-brand relationship typology. *Psychology & Marketing*, 21(4), 279-294.

Woodside, A.G.; Chebat, J. (2001). *Updating Heider's balance theory in consumer behavior: A Jewish couple buys a German car and additional buying-consuming transformation stories*. *Psychology & Marketing*, 18(5), 475-495.

Wright, P (1974). On the Direct Monitoring of Cognitive Response to Advertising. In , G.D. Hughes and M.L. Ray (Eds.), *Buyer/Consumer Information Processing* (pp. 220-248). Chapel Hill, NC: University of North Carolina Press.

VITA

Deepashree A. Athle was born on October 6th, 1975 in Mumbai, India, the daughter of Ajit L. Athle and Mrinal A. Athle. After completing her schooling at Bombay Scottish School, Mumbai, in 1991, she received a Bachelor of Science degree in Occupational Therapy from Seth Gordhandas Sundardas Medical College and King Edward Memorial Hospital, Mumbai, India, in 1997. During the three years following, she worked as a copywriter for Trikaya Grey, Mumbai, India, and Ambience D'Arcy Advertising, Mumbai, India, before arriving in the United States of America. She spent one semester prior to the summer of 2000 taking undergraduate courses in Psychology at Troy State University, Alabama, after which she has been a student in the Department of Psychology at the University of Texas at Austin. She received a Master's degree in Arts in August, 2003, and intends to pursue a career in market research after graduating with a Doctor of Philosophy degree in August, 2006.

Permanent address: 308 E. 32nd St. #B, Austin, TX 78705

This dissertation was typed by Deepashree A. Athle.