Development of a Dual-Form Abortion Scale

JOHN K. BOWERS AND HERBERT B. WEAVER

Abstract

Previous studies of attitude toward abortion have indicated that there are strong differences closely related to a person's religious affiliation. However, these studies relied upon the rating of situations which resemble the content of official theological discussions on the morality of abortion made by various religions. This might have influenced their results. In order to investigate the presence of religion group differences in attitude toward abortion while avoiding a direct association with official religious stances on the morality of reasons for seeking an abortion, a 40-item, Likert-type scale was devised containing a wide variety of abortion-related items. The scale was administered to 147 subjects who had a wide range of age, educational, and religious differences. The results clearly indicated that Catholics and Mormons had a significantly more negative attitude toward abortion than either Protestants or those with no religious preference. It was concluded that there is a definite religious affiliation effect involved in one's attitude toward abortion even when that attitude is measured by an instrument which does not reflect one's level of commitment to situations described in official religious statements on abortion.

Several studies of the attitude of Americans toward abortion have revealed that a number of factors seem to be related to one's attitude toward the practice. Most of these studies seem to be in agreement that the single variable most closely aligned with one's attitude toward abortion is one's religious affiliation (Arney & Trescher, 1976; Barber, 1973; Bogen, 1974; David, 1973; Rosen, Werly, Ager, & Shea, 1974). These and other studies have shown that Catholics, as a group, have a consistently more negative attitude toward abortion than most Protestant groups.

Very often, however, "major" studies of attitude toward abortion have relied upon the rating of the medical legitimacy of obtaining an abortion in six specific situations (Arney & Trescher, 1976; Bogen, 1974; Pomeroy

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& Landman, 1972). These six situations represent two general categories of reasons given by those seeking an abortion. The first category centers on three situations which pose a possible threat to the emotional and/or medical health of the mother—the pregnancy presents a real threat to the medical health of the mother, the pregnancy is a result of rape, there is a high probability that the child will be born deformed. The second category focuses upon socioeconomic factors related to the pregnancy—the mother is unmarried, the couple cannot afford another child, the couple has attained its desired number of children. Although abortions performed for health reasons (therapeutic abortions) are not rare, abortions performed for socioeconomic reasons represent the most common class of reasons cited by women seeking abortions (Rockefeller, 1976).

Although ratings of these situations as being either permissible or non-permissible reasons for obtaining an abortion have achieved a clear differentiation among religious groups (Catholics vs. other religion groups), the differences seem directly in line with the official Church stance toward abortion of the religion groups surveyed (Barber, 1973). Catholics have indicated general approval of abortion only for the therapeutic reasons (particularly that related to the health threat of the pregnancy to the mother); Protestants have indicated strong approval for all the therapeutic reasons and less strong approval for abortions motivated by socioeconomic considerations (Arney & Trescher, 1976). But since these six reasons for seeking an abortion seem to mirror the most commonly used examples discussed in theological statements on the subject (Barber, 1973), it is possible that these abortion attitude studies may have been measuring the subjects’ degree of commitment to the official position of their religions on abortion. In order to insure that these studies have not merely been measuring degree of commitment to theological positions, another type of attitude measure seems desirable. If such a measure obtained the same type of religious group dichotomy by a means not limited to situations typically discussed in official theological statements on the morality of abortion, it would confirm that previously obtained differences were valid. Toward this end a new “abortion scale” has been generated and validated.

**Method**

*Item Selection*

*Subjects.* Initially, 200 individuals, 114 females and 86 males, representing a variety of ethnic, educational, socioeconomic, and religious
backgrounds were asked to rate anonymously their feelings about 76 statements related to abortion. These subjects were recruited by one of the coauthors and several of his students with an effort being made to achieve heterogeneity in the sample. These 200 subjects ranged in age from 18 to 54 years; 114 of these subjects stated no religious preference, 24 were Catholic, 51 were Protestant, and 11 were members of other religions.

**Materials.** The original 76 items were developed by writing a number of statements about abortion (defined as the termination of an unwanted pregnancy). These statements, written by one of the coauthors and a colleague, emphasized a wide range of positions regarding abortion. This set of items contained statements like these: “To allow an unwanted child to be born is unfair to the child”; “A society that permits abortion freely debases the value of human life”; and “Abortion is neither more or less moral than any other surgery.”

**Procedure.** The 200 subjects were asked to rate the 76 statements in terms of their attitude toward it according to a 5-point, Likert-type scale (strongly agree, agree, undecided, disagree, strongly disagree). Their responses were scored according to a scale of 5 points to 1 point for pro-abortion items and 1 point to 5 points for anti-abortion items (see Barclay & Weaver, 1962, for a presentation of this rationale). Hence, for the item “Abortion should be legal,” a response of “strongly agree” was scored as 5, whereas the response “strongly disagree” was scored as 1. The total score for each subject was computed and the scores for all subjects arranged from the highest to the lowest, and the highest and lowest 10% of the total group were selected as representing the response pattern of those most pro-abortion and most anti-abortion, respectively. Next the mean score for each item was computed for each of the two extreme groups and these group-item-means were subtracted from each other in turn (e.g., if for Item 53 the mean pro-abortion group score was 4.96 and the mean anti-abortion group score was 1.96, the difference between the mean scores on this item for the groups was 3.00). Items with the greatest mean difference between the two groups were considered to be the most discriminating in detecting a subject’s attitude toward abortion. This procedure identified 40 items with a group-mean-score-difference of 2.05 or greater (where the maximum difference was 4.00) out of the original 76 items. These 40 items were divided into two groups of 20 items each.

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1 Professor Weaver was assisted by Gordon Lau, Linda Middleton, Susan Nems, JoAnn Nip, Karla Paulsen, and Patrick Young.

2 Professors Herbert Weaver and Abe Arkoff (Department of Psychology, University of Hawaii) composed the original 76 statements.
in such a way that the sum of the group-mean-score-differences for each set of 20 was approximately equal.

**Dual-form Scale**

*Subjects.* A total of 175 subjects were administered the dual-form abortion attitude scale. All of the subjects were members of the faculty and their spouses, or students and their spouses and/or parents, except for a small group of seven subjects who were members of a Mormon young adult organization. The subjects were divided into three groups according to religious preference; there were 49 subjects in each group with the rest of the forms discarded. Group I consisted of 28 Catholics and 21 Mormons (Mormons have traditionally been as strongly anti-abortion as Catholics). Group II consisted of 49 subjects listing one of several Protestant religious affiliations. Group III consisted of 49 subjects who claimed to be atheistic/agnostic. (It should be noted that the size of Group I determined the size of the other groups since there were fewer Catholics and Mormons surveyed; those subjects whose responses constituted Group II and Group III were randomly selected from the rest of the sample.) Thus, the response forms of 147 subjects were scored and used in computation.

Besides religious preferences, data were collected on the sex, age, achieved educational level, and marital status of the subjects. There were 84 males and 63 females with no inter-group differences. The median age of the sample was 23 years with a range from 18 to 71 years. The mean age of Group I, \(M = 32.82\) years \((SD = 14.76)\), was significantly higher than that of Group III, \(M = 25.76\) years \((SD = 9.30)\), \(t(49) = 2.83, p < .05\). The mean age of Group II, \(M = 28.12\) years \((SD = 10.32)\), did not differ significantly from that of Group I or Group III. The average overall educational level of these 147 subjects was about 15 years of education (comparable to having completed the third year of college). The overall range was from completion of 8 to 20 years of education. Although there were no significant differences among these groups in mean educational attainment level, within Group I, Catholics, \(M = 15.85\) years of schooling \((SD = 2.46)\), were significantly more highly educated than Mormons, \(M = 14.10\) years \((SD = 2.30)\), \(t(47) = 2.54, p < .05\). Considerably more of the subjects were unmarried \((n = 102)\) than were married \((n = 45)\). Significantly more subjects in Group I were married than subjects in Group III, \(t(49) = 2.83, p < .05\); no other comparison of marital status differences between groups was significant.

*Materials.* By means of the procedure described above, a 40-item
measure of attitude toward abortion was generated, having two equivalent forms of 20 items each. Form-A contained 12 pro-abortion items and 8 anti-abortion items; Form-B contained 11 pro-abortion items and 9 anti-abortion items. When rated according to the Likert scale method mentioned above, the score on either form of this protocol\(^3\) could range from a low of 20 (a perfect anti-abortion score) to a high of 100 (a perfect pro-abortion score). Finally, a simple demographic data sheet was attached to the dual-form attitude scale.

**Procedure.** The 175 subjects were asked to rate anonymously each of the 20 items of Form-A and of Form-B in terms of their attitude about abortion. For half of the subjects, Form-A was rated first followed by Form-B; for the other half of the subjects, the order of presentation was reversed with Form-B first. All of the subjects provided the demographic data, discussed above, after completing their ratings of the two 20-item scales. After the members of each of the three religion groups were determined (see above), the protocols were scored in the same way as the original items.

**Results**

Analyses on the data were conducted for each of the two forms of the 40-item scale as well as for the entire scale. The results of separate analyses of variance on each of the two forms and the entire scale in terms of the three religious group divisions are presented in Table 1. Significant religion group effects were obtained for Form-A, \(F(2,144) = \)

<table>
<thead>
<tr>
<th>Scale</th>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>(F)</th>
</tr>
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<tbody>
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<td>Groups</td>
<td>2</td>
<td>27,192.62</td>
<td>49.22*</td>
</tr>
<tr>
<td></td>
<td>Subjects</td>
<td>144</td>
<td>39,779.13</td>
<td></td>
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<td></td>
<td>Total</td>
<td>146</td>
<td>66,971.75</td>
<td></td>
</tr>
<tr>
<td>Form-B</td>
<td>Groups</td>
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<td>23,522.62</td>
<td>45.12*</td>
</tr>
<tr>
<td></td>
<td>Subjects</td>
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<td>37,583.84</td>
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<tr>
<td></td>
<td>Total</td>
<td>146</td>
<td>61,136.46</td>
<td></td>
</tr>
<tr>
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<td>104,293.60</td>
<td>50.46*</td>
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<tr>
<td></td>
<td>Subjects</td>
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<td>148,814.67</td>
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<tr>
<td></td>
<td>Total</td>
<td>146</td>
<td>253,108.25</td>
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</tr>
</tbody>
</table>

\(^* p < .01\)

\(^3\)Copies of the 40-item, dual-form abortion attitude scale with scoring instructions are available from John K. Bowers.
49.22, \( p < .01 \), for Form-B, \( F(2,144) = 45.12, p < .01 \), and for the entire scale, \( F(2,144) = 50.46, p < .01 \). Mean scores and standard deviations for each of the three religion affiliation groups are presented in Table 2. Subsequent tests on the group mean scores were performed for both forms and the entire scale using the Scheffé procedure (Scheffé, 1953). The results of these group-mean comparisons indicated that Group I (Catholics and Mormons) scored significantly lower (more anti-abortion) than either Group II (Protestants) or Group III (Atheists and Agnostics) on Form-A, \( t(144) = 7.53, p < .01 \), and \( t(144) = 9.36, p < .01 \), respectively; on Form-B, \( t(144) = 7.35, p < .01 \), and \( t(144) = 8.88, p < .01 \), respectively. And, of course, for the entire scale, Group I was significantly lower than either other group, \( t(144) = 7.71, p < .01 \), and \( t(144) = 9.42, p < .01 \), respectively. There was no significant difference between Group II and Group III in any case.

Within Group I there were strong differences between the mean scores of the Catholics and Mormons. The Mormon subgroup consistently scored lower (more anti-abortion) than the Catholics on Form-A, \( M = 36.86 (SD = 11.81) \), and \( M = 58.25 (SD = 21.43) \), respectively; on Form-B, \( M = 36.19 (SD = 11.49) \), and \( M = 57.36 (SD = 20.18) \), respectively; and, of course, on the entire scale, \( M = 73.05 (SD = 22.69) \), and \( M = 114.19 (SD = 41.15) \). However, since there was a problem with heterogeneity of variance, \( t \)-tests of these mean differences could not be computed.

The correlation between Form-A and Form-B (the split-half reliability coefficient) was \( r = .96 \). When the Spearman-Brown correction was computed, the interform reliability coefficient became \( r = .98 \). (Each form was, of course, significantly related to the entire scale, \( r_{AE} = .99 \), \( r_{BE} = .99, p < .01 \)—two-tailed test.) The internal consistency of the entire scale as measured by "coefficient alpha" (Crano & Brewer, 1973, pp. 222-261; also see Cronbach, 1951, pp. 297-334), the average inter-item

<table>
<thead>
<tr>
<th>Group</th>
<th>Form-A</th>
<th>Form-B</th>
<th>Entire Scale</th>
</tr>
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<tbody>
<tr>
<td>I (Catholic/Mormon)</td>
<td>( M )</td>
<td>49.08</td>
<td>48.29</td>
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<td>( SD )</td>
<td>20.76</td>
<td>19.90</td>
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<tr>
<td>II (Protestant)</td>
<td>( M )</td>
<td>74.37</td>
<td>72.29</td>
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<tr>
<td></td>
<td>( SD )</td>
<td>16.14</td>
<td>15.50</td>
</tr>
<tr>
<td>III (Atheist/Agnostic)</td>
<td>( M )</td>
<td>80.51</td>
<td>77.29</td>
</tr>
<tr>
<td></td>
<td>( SD )</td>
<td>11.71</td>
<td>12.11</td>
</tr>
</tbody>
</table>
correlation of all items was found to be \( r_{tt} = +.98 \). For Form-A and Form-B separately the “coefficient alpha” was the same value, \( r_{tt} = +.97 \). Since these correlations are based upon all cases and since there were demonstrable differences among the groups, correlations for each of the three groups were computed and averaged based upon the Fisher \( z \)-transformation of \( r \). Based on that procedure, the average \( r \) for Form-A and Form-B for the entire sample was \( r = +.92 \).

**Discussion**

This 40-item abortion attitude scale has demonstrated both high reliability and construct validity. Each form of the scale as well as the entire scale has strong internal consistency which evidences that the items were focusing upon the same attitude. The Spearman-Brown Prophecy Coefficient \( (r = +.98) \) indicates that the overall scale reliability was very high. Further, the average correlation between the forms across the three groups \( (r = +.92) \) is quite high and indicates strong reliability. (When the sample was divided into four groups—Catholics, Mormons, Protestants, and Atheists/Agnostics—averaging of the inter-form correlations by the Fisher \( z \)-transformation procedure resulted in an average correlation of \( r = +.93 \) for the entire sample.) Hence, both forms and the entire scale possess strong internal consistency.

This scale also demonstrated the capability of distinguishing between groups known to differ in their attitudes toward abortion. Catholics and Mormons (Group I) scored significantly lower (more anti-abortion) than did Protestants (Group II) or those with no religious affiliation (Group III). Hence, this scale has construct validity, even though the sample, made up mostly of members of a college community, might be suspected of being more liberal in their attitudes than their confreres in the general community. Although it is known that age is correlated with an anti-abortion attitude (Scarr, 1972) (the older the sample, the more anti-abortion is the attitude) and, in this study, Group I was significantly older than Group III, it does not seem likely that this factor was important in this study since Group I was significantly more anti-abortion than Group II but did not differ significantly from them in age. This argument also applies to the marital status differences between Group I and Group III, since there was no difference between Group I and Group II in marital status. Since the only difference between Catholics and Mormons in Group I was in average level of educational attainment (there were no differences between the two groups of Mormons), some of the differences
in scoring on the abortion scale may have been due to that factor, but clearly more research is needed if a definitive explanation is to be made. The high inter-item correlation coefficient, coefficient alpha, is an indication of the strong internal consistency of this scale and the high inter-form correlation, based upon the Fisher z-transformation of \( r \) to produce non-group-biased average correlations, indicates that either form of this scale would provide a reliable measure of attitude toward abortion. Of course, the manner in which items were selected for the final form of this abortion attitude scale does tend to produce internal consistency; what is needed is more research where reliability can be determined on a test-retest basis. Yet, since these forms, separately and in combination, possess demonstrable construct validity, a short, easily administered and scored, and non-theologically-oriented measure of abortion attitude is now available. The use of the 20-item forms of this measure should require less than 30 minutes to administer and score. As a substitute for the more traditional abortion attitude scales, these forms are not limited to situations which reflect theological phrasing; rather, these forms have avoided traditional phrasing, yet have been shown to possess the ability to discriminate among groups in predictable directions.

References


Bogen, I. Attitudes of women who have had abortions. Journal of Sex Research, 1974, 10, 97-109.


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