Friendship and the Religiosity of Indonesian Muslim Adolescents

Doran C. French · Urip Purwono · Airin Triwahyuni

Abstract Adolescents’ religious involvement occurs within a social context, an understudied aspect of which is relationships with peers. This longitudinal study assessed changes in religiosity over 1 year and explored the extent to which these were associated with their friends’ religiosity and problem behavior. The first year sample included 1,010 (52.5% female) Muslim 13 and 15 year old Indonesian adolescents; 890 of these were assessed 1 year later. Adolescents were similar to their friends in religiosity. Changes in religiosity from year one to two were associated with friends’ religiosity such that adolescents with religious friends were more religious at year two than those with less religious friends. Reductions in religiosity were also associated with the presence of problem behavior, consistent with the inverse relationship between these. Peers may play an important role in the development of adolescent religiousness and exploring these influences deserves further study.

Keywords Friendship · Religion · Culture · Islam · Indonesia

Introduction

Contemporary research on the influence of peers on adolescents has primarily focused on either antisocial behavior (e.g., Dishion et al. 2010) or academic status (Cook et al. 2007). Peers, however, likely impact many other aspects of youth development, including prosocial behavior and values (Allen and Antonishak 2008). In the present study, we consider the possibility that the characteristics of adolescent’s friends are associated with their religious practices. Although there has been little research exploring peer involvement and youth religiosity, there are suggestions that peers may have a strong impact on adolescents’ religious behavior and attitudes (Regnerus et al. 2004; Schwartz et al. 2006). For example, Fowler (1981) provides a theoretical model that highlights the role of peer relationship in the development of religiousness. He suggests that during the synthetic-conventional stage of faith development, a stage that tends to be prominent during the adolescent years, people are strongly dependent upon others, including peers, in their efforts to formulate religious views. Thus, although there are compelling reasons to believe that peers influence adolescents’ religious practices in manner similar to the way that they influence on other aspects of adjustment, the empirical evidence in support of this position is limited (King and Roesner 2009).

Homophily and Peer Influence

Two complementary processes underlie the influence that peer relationships have on adolescents (Prinstein and Dodge 2008), processes that are also likely to be important in understanding the association between adolescent religiosity and peer involvement. The first is that youth develop relationships with others who are similar to themselves on a
variety of behavioral, physical, and attitudinal characteristics (Prinstein and Dodge 2008). This process, labeled “homophily”, explains in part why adolescents tend to participate in friendships and social networks that share characteristics such as mutual interests in academics, athletics, delinquent activities, and substance use. Second, friends influence each other in ways that lead them to become increasingly similar over time. These synergistic processes provide an explanation of how peers likely impact the development of both prosocial and antisocial behavior.

Findings of friendship homophily have been well documented (Rubin et al. 2008). There is consistent evidence that delinquent and antisocial youth develop friendships and affiliations with each other (e.g., Cairns et al. 1988; Dishion et al. 1997; Haselager et al. 1998). Friends also display similar levels of internalizing behavior (Haselager et al. 1998, Hogue and Steinberg 1995; Kupersmidt et al. 1995) and resemble each other in academic qualities including grades and attitudes toward school (Cook et al. 2007; Epstein 1989; Kupersmidt et al. 1995). Finally, friends are similar in their level of sociometric status (Haselager et al. 1998; Kupersmidt et al. 1995; Roff and Sells 1967).

Adolescents also tend to associate with others who are similar to themselves in their religious beliefs (Smith and Denton 2005). The strongest evidence of homophily among friends in religiousness comes from (French et al. 2011) study of Indonesian Muslim adolescents. They found that friends were similar to each other in religiosity, an effect that remained when sociometric status, aggression, and academic achievement were controlled. Thus, the similarity of religiosity of youth with their friends does not appear to be an artifact of their similarity on other dimensions that might be associated with religiosity.

Peers are also thought to influence each other in ways that increase their similarity (Prinstein and Dodge 2008). Involvement with deviant peers has been associated with an increased likelihood that youth exhibit delinquency, substance use, school drop-out and early sexual involvement (Card and Hodges 2006; Dishion et al. 1996, 2008; Elliott 1994, French and Dishion 2003; Vitaro et al. 2000). Dishion and his colleagues have observed how deviant peers selectively reinforce each other to endorse increasingly severe delinquent behavior (Dishion et al. 1995), providing a microanalytic analysis of one mechanism by which peer influence occurs. Although most of the work on peer influence has focused on delinquency and antisocial behavior, it is likely that peers also influence other aspects of youth behavior.

There are also suggestions adolescents’ behavior is predicted in part by the religiosity of their friends. Stark (1996) hypothesized that peer involvement is particularly important for understanding the negative associations between religiosity and delinquency, arguing that it is essential to understand the extent to which adolescents’ religiousness is supported by their peers. Empirical evidence that peer associations partly explain the lower levels of deviant behavior of religious adolescents comes from Burkett and Warren’s (1987) findings that religiosity influences marijuana use indirectly through involvement with peers that abstain from such use. Simons et al. (2004) similarly found that child religiosity was negatively associated with involvement with deviant peers, a pathway that accounted for the lower delinquency of religious children. These findings provide evidence of the interrelationship between religiosity and problem behavior in adolescence.

Peers also likely influence each other with respect to religious beliefs. The strongest evidence of the impact of peer relationship on youths’ peer religiosity comes from Regnerus et al.’s (2004) analysis of data from the National Longitudinal Study of Adolescent Health. Adolescents’ church attendance was concurrently predicted by the church attendance of the adolescents’ friends. Most important, however, were the results from longitudinal analyses showing that friends’ religious service attendance at Wave 1 predicated attendance at religious services 1 year later at Wave 2, a result that emerged when parental religious attendance was also included in the model. Similar effects emerged when adolescents’ importance of religion at Wave 2 was predicted from parents’ and friends’ importance of religion. These findings are consistent with scattered reports coming from the United States that youth with religious friends tend to be more religious than youth with non-religious friends. The religiosity of 17–22 year old youth was predicted by their peers’ church attendance (Gunnoe and Moore 2002), and adolescent religious faith was associated with perceived religious support from friends (Schwartz 2006). King et al. (2002) showed that peer influences were associated with adolescents’ ratings of religious importance and experience of God. Similarly, Desrosiers et al. (2010) found that adolescents’ spirituality was predicted by support of religiosity by their peers, an effect that emerged after controlling for parental support of religiosity. Thus, finding from multiple studies provide support for the hypothesis that peer relationships impact adolescent religiosity.

Religiosity of Indonesian Muslim Adolescents

We studied Muslim adolescents in West Java, Indonesia, affording us the opportunity to assess friendships and religiosity in a population that is strongly religious and within which there is uniformity of religious affiliation. Our sample came from public schools in West Java, Indonesia within which almost all adolescents are Muslim. Indonesia contains the world’s largest Muslim population.
Approximately 90% of the citizens in this country, the fourth most populous country, are Muslim. The government is a democracy within which six religions are officially recognized. Although there is pressure from some groups in Indonesia to incorporate Islamic law into the judicial code (Bianchi 2004), there is little public support for this (Davis and Robinson 2006). Religious affiliation appears on official identification cards and is listed in most other demographic databases. Religion is a required subject in both public and private Indonesian schools, and most Muslim students attend schools in which the vast majority of students are also Muslim. In the Year 2000 World Values Survey of 18-to 24-year-old youth, 100% of the Indonesian sample indicated that religion was very important in their daily life (Lippman and Keith 2006), providing further evidence of the importance of religion in this country. West Java, the location of our research, is considered one of the most strongly religious regions in Indonesia (Bianchi 2004; Glicken 1987), with the form of Islam practiced here similar to that exhibited in other regions of the world.

The salience of religion among Muslim Indonesian adolescents is reflected in findings that religious involvement also is related to their social competence. Religious involvement, as measured by parents’ and adolescents’ ratings of religiosity and spirituality, was associated with multiple aspects of adjustment including self-esteem, peer status, regulation, prosocial behavior, and low internalizing and externalizing behavior (French et al. 2008). In a follow-up of this sample, Sallquist et al. (2010) showed that seventh grade religious involvement predicted ninth grade socially appropriate behavior. These findings provide empirical support that within the strongly religious culture of West Java, that the religiosity of adolescents is associated with multiple aspects of their adjustment and social relationships.

The Present Study

We expanded the study of peer influence to explore the impact of friendships of eighth and tenth grade adolescents on their religiosity. Specifically, we assessed the religiosity and problem behavior of adolescents’ friends and assessed the extent to which these were associated with changes in adolescents’ religiosity over a 1 year period. We included both adolescent’s and their friend’s problem behavior in our analyses because of findings that problem behavior is intertwined with religiosity (e.g., Simons et al. 2004; Stark 1996). We were thus able to assess the extent to which friends’ religiosity incrementally added to the prediction of adolescents’ Y2 religiosity over that provided by their engaging in problem behavior and having friends who shared such proclivities. Based on prior research (Sallquist et al. 2010), we anticipated that tenth grade adolescents would exhibit lower levels of religiosity and higher levels of problem behavior than eighth grade adolescents. Despite these grade differences, however, we expected that the association between adolescents’ religiosity and the religiosity and problem behavior of their friends would be similar in both grades.

Because almost all adolescents in the selected grades participated in our assessment, it was possible to identify friendships based on mutual friend nominations. Defining friendship as mutually identified “best friends” is consistent with suggestions that this approach is optimal for identifying strong friendship relationships (Berndt and McCandless 2009). Furthermore, because the level of religiosity and problem behavior were obtained from individual self-reports, the information about the characteristics of adolescents and their friends came from different sources.

Our longitudinal design enabled us to explore the characteristics of adolescents who changed their level of religiosity over time. We hypothesized that adolescents who increased their religiosity or maintained high level of religiosity would have friends who were highly religious and exhibited low levels of problem behavior. Conversely, we expected that adolescents who either maintained low levels of religiosity or decreased their religiosity would have friends who were low in religiosity and high in problem behavior.

Method

Participants

An initial sample of 1,010 Muslim Indonesian adolescents were recruited at Year 1 (Y1) from eighth (230 male, 282 female; mean age = 13.37, SD = 0.45) and tenth grades (250 male, 248 female; mean age = 15.36, SD = 0.52). At Y2, we recruited those adolescents who participated in the Y1 assessment and were enrolled in their same schools, yielding a follow-up (Y2) sample of 891 adolescents who completed both years (Y1, Y2) of the study. These included 476 who were in the eighth grade (212 boys and 264 girls) and 415 in the tenth grades (206 boys and 209 girls) at Y1. In addition to the follow-up participants, we also recruited an additional 284 adolescents at Y2, enabling us to identify the characteristics of the friends of those in the follow-up sample. The primary analyses in this article focused on those adolescents who completed both years of data collection.

Students were recruited from public schools in Bandung, a city with a population of approximately two million.
Eighth and tenth grade students attended middle and high schools, respectively, and three schools at each level participated. More than 95% of the students attending these schools were Muslim. Signed parental consent and adolescent assent was obtained from more than 96% of the population solicited for participation. The participating schools enrolled adolescents from middle and upper middle class families. The high social status of parents is reflected in parental education statistics; 46% of mothers and 56% of fathers had some post high school education, 40% of mothers and 36% of fathers had a high school education, and 11% of mothers and 6% of fathers had a junior high school education.

Measures

Religiosity

We used a self-report scale developed by Purwono (2010) to assess the extent to which adolescents engaged in Muslim religious practices. This measure was developed following focus group discussion of Islamic leaders, faculty members, and University students and included items assessing both required and recommended practices. Required practices included performing the five daily prayers, attending the Friday prayers in the mosque (for boys and men), and fasting during the month of Ramadan. Recommended practices included activities such as performing daily additional prayers, fasting 6 days during the month following the month of Ramadan, and memorizing the Qur’an. The scale consisted of two sections that were combined to produce a total score. In the first, 18 items were rated using a seven point scale which required adolescents to indicate the frequency (never to always). In the second section, they reported on their exhibition of four behaviors during the prior 7 days. For example, they were asked “during the past 7 days did you miss the five daily prayers?” and responded using a five-item scale (1-never to 5-three or more times each day). Two of the items were omitted for girls because of sex differences in religiously prescribed behavior; girls typically pray at home rather than at the Mosque on Friday afternoon and are not expected to fast during periods of menstruation. Thus, the scale for boys and girls, respectively, consisted of 22 and 20 items. To control for differences in the number of items for boys and girls, the mean score across items was computed. The internal consistency of the scale was .85 for both sexes at Y1, and .87 for boys and .83 for girls at Y2.

This scale also was used to group youth into four categories based on their consistency of performing required and recommended practices. The “very consistently practicing” youth were those who reported always performing both required and the recommended practices (i.e., reported always on the first part of the measure and never in response to a failure to practice on the second part of the measure). Included in this category were 24 youth, 1.85% of the Y1 total sample. The “consistently practicing” youth were those who reported always performing all the required but not the recommended practices; this included 320 adolescents who comprised 24.71% of the population. The “inconsistently practicing” youth were those who reported intermittent practice of required activities; there were 667 adolescents (51.51%) so classified. There were no adolescents in the sample who were classified into the fourth category, “non-practicing”.

Problem Behavior

Adolescents reported on their engagement in problem behavior over the prior month using a modified version of the Elliot et al. (1985) measure. The scale consisted of a list of 20 behaviors, e.g., stealing, lying to parents, fighting, skipping school, taking money without permission, sneaking out of the house, viewing pornographic materials, and taking money. Adolescents rated the frequency with which they exhibited each of these behaviors during the preceding month using a 7-point scale that was anchored by never, to almost every day; \( \alpha = .80 \) at Y1 and .83 at Y2.

Mutual Friendships

Participants were asked to identify their “three closest friends who attend their school and are in the same grade”. From these data, mutually nominated friends were identified. At Y1, adolescents had a mean of 1.64 mutual friendships. Most of these were between adolescents of the same sex; 95% for boys and 97% for girls. Girls had significantly more mutual friends than boys \((m = 1.80 \text{ vs. } 1.48, d = .33), F (1, 1,007) = 27.92, p < .001\), and there were no significant differences in the number of mutual friends of eighth and tenth grade students. Similar effects emerged from the analysis of the total Y2 sample. Adolescents had a mean of 1.91 mutual friendships, most of which were same sex (91% of boys and 93% for girls). Girls at Y2 also had more mutual friends than did boys \((m = 1.70 \text{ vs. } 2.10, d = .40), F (1, 1,158) = 48.77, p < .001\).

There were 129 adolescents in the total Y1 sample that did not have mutual friends. Adolescents without mutual friends were higher in self-rated problem behavior than those with friends, \(t (1,007) = 3.13, p < .01, d = .28\), \(t (1,160) = 2.57, p < .05, d = .22\). Adolescents with mutual friends did not differ in their levels of religiosity from those without friends. Within the sample of adolescents who completed both years on this study and were thus subjects in these analyses, there 111 who did not have a mutual friend at Y1 and 92 who did not have a mutual
friend at Y2. Thus, out of the 891 adolescents who were in the follow-up sample, 176 of these were not included in the longitudinal analyses because of missing friend data at either Y1 or Y2. Of these, however, only 27 adolescents did not have a mutual friend at either of these times.

**Friends’ Religiosity and Problem Behavior**

Religiosity and problem behavior of friends were computed as the mean of these variables for the adolescent’s mutual friends, the number of which ranged between 1 and 3. These scores came from the friends’ self reports and were thus independent from the ratings of the primary participant.

**Results**

In Table 1 are the means and standard deviations of measures of religiosity and problem behavior, and friends’ religiosity and problem behavior for both years broken down by both sex and grade. These data are provided only for those participants at Y1 who also participated at Y2.

To assess the extent to which attrition from Y1 to Y2 impacted the characteristics of the sample, we compared those Y1 adolescents who participated at Y2 with those who did not. Compared with those who participated at both years, adolescents who exited the sample at Y2 were less religious, \( t(1003) = 3.90, p < .001, d = .38 \), and reported higher levels of problem behavior, \( t(1001) = 4.28, p < .001, d = .26 \). The friends of those who exited were also less religious, \( t(875) = 3.85, p < .001, d = .35 \), and reported higher level of problem behavior, \( t(875) = 5.81, p < .001, d = .68 \) than did those that participated at both time periods.

Correlations between measures broken down by sex for those participants who completed both years of the study are presented in Table 2. These analyses reveal significant associations between adolescents’ religiosity and their friends’ religiosity across years and sex. The correlations between religiosity and friends’ religiosity were also similar across grade (i.e., .37 for eighth grade and .34 for tenth grade). Negative associations between religiosity and self- and friend problem behavior also were obtained.

**Religiosity and Problem Behavior of Adolescents and Their Friends**

Below we report the results from a series of 2 by 2 by 2 mixed design ANOVAs for religiosity, friends’ religiosity, problem behavior, and friends’ problem behavior. Sex and grade were between subject factors and year (Y1, Y2) was the within subject factor. These analyses were restricted to those adolescents who completed both years of the study. The results from the analyses of adolescent and their friends’ religiosity failed to yield evidence of a significant repeated main effect for year or an interaction of this factor with either grade or sex. For both self- and friends’ religiosity, there were respective main effects for sex, \( F(1, 887) = 14.78, p < .001; F(1, 711) = 10.54, p < .001 \); grade, \( F(1, 887) = 82.06, p < .001, F(1, 711) = 35.94, p < .001 \); and sex by grade interactions, \( F(1, 887) = 6.52, p < .05, F(1, 711) = 7.42, P < .001 \). Boys and their friends reported higher levels of religiosity than girls and their friends, \( d = .28, d = .35 \). Lower religiosity at high school than middle school was reported by both adolescents and their friends, \( d = .53, .61 \). The sex by grade interaction was explained by the finding that boys and their friends showed a larger reduction from

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**Table 1** Means, standard deviations and n’s for self and friend’s problem behavior and religiosity by grade, sex, and year

<table>
<thead>
<tr>
<th></th>
<th>Boys-8th</th>
<th></th>
<th>Girls-8th</th>
<th></th>
<th>Boys-10th</th>
<th></th>
<th>Girls-10th</th>
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<tbody>
<tr>
<td></td>
<td>m (SD)</td>
<td>n</td>
<td>m (SD)</td>
<td>n</td>
<td>m (SD)</td>
<td>n</td>
<td>m (SD)</td>
<td>n</td>
</tr>
<tr>
<td>Religiosity Y1</td>
<td>3.89 (.59)</td>
<td>230</td>
<td>3.61 (.66)</td>
<td>282</td>
<td>3.46 (.66)</td>
<td>250</td>
<td>3.33 (.57)</td>
<td>248</td>
</tr>
<tr>
<td>Religiosity Y2</td>
<td>3.89 (.60)</td>
<td>212</td>
<td>3.64 (.62)</td>
<td>264</td>
<td>3.45 (.67)</td>
<td>206</td>
<td>3.38 (.59)</td>
<td>209</td>
</tr>
<tr>
<td>Problem behavior Y1</td>
<td>.61 (.43)</td>
<td>228</td>
<td>.45 (.38)</td>
<td>282</td>
<td>1.16 (.77)</td>
<td>250</td>
<td>.59 (.49)</td>
<td>248</td>
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<tr>
<td>Problem behavior Y2</td>
<td>.80 (.51)</td>
<td>212</td>
<td>.52 (.40)</td>
<td>264</td>
<td>1.33 (.73)</td>
<td>206</td>
<td>.66 (.49)</td>
<td>209</td>
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<tr>
<td>Friends’ religiosity Y1</td>
<td>3.89 (.46)</td>
<td>189</td>
<td>3.61 (.56)</td>
<td>254</td>
<td>3.44 (.59)</td>
<td>213</td>
<td>3.32 (.49)</td>
<td>225</td>
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<tr>
<td>Friends’ religiosity Y2</td>
<td>3.86 (.51)</td>
<td>183</td>
<td>3.61 (.52)</td>
<td>250</td>
<td>3.44 (.50)</td>
<td>177</td>
<td>3.38 (.38)</td>
<td>189</td>
</tr>
<tr>
<td>Friends’ problem behavior Y1</td>
<td>.56 (.34)</td>
<td>189</td>
<td>.42 (.26)</td>
<td>254</td>
<td>1.10 (.72)</td>
<td>213</td>
<td>.59 (.41)</td>
<td>225</td>
</tr>
<tr>
<td>Friends’ problem behavior Y2</td>
<td>.83 (.46)</td>
<td>183</td>
<td>.54 (.34)</td>
<td>250</td>
<td>1.29 (.65)</td>
<td>177</td>
<td>.71 (.41)</td>
<td>189</td>
</tr>
</tbody>
</table>

Included are Y1 participants and Y1 participants assessed at Y2.
middle school to high school ($d = .67$, .78) than did girls and their friends ($d = .39$, .47).

The mixed design ANOVAs for both adolescent problem behavior and friends’ problem behavior yielded significant repeated measures effects for year, $F (1, 866) = 75.58$, $p < .001$, $F (1, 711) = 97.18$, $p < .001$ as well as year by sex interactions, $F (1, 866) = 15.11$, $p < .001$, $F (1, 711) = 10.15$, $p < .01$. For both adolescents and their friends, there was an increase in problem behavior from Y1 to Y2 ($d = .22$, $d = .23$), and these increases were larger for boys ($d = .34$, .47) than for girls ($d = .13$, .21). Significant between subject effects also emerged from these analyses. These included significant main effects for sex, $p (1, 886) = 168.71$, $p < .001$, $F (1, 711) = 204.81$, $p < .001$; grade, $F (1, 886) = 105.74$, $p < .001$, $F (1, 722) = 138.43$, $p < .001$; and sex by grade interactions, $F (1, 886) = 38.25$, $p < .001$, $F (1, 711) = 33.65$, $p < .001$. Boys and their friends reported more problem behavior than girls and their friends, $d = .68$, .73, and high school students reported more problem behavior than middle school students, $d = 55$, .60. The interaction effect was attributable to the greater increase from middle to high school for boys and their friends ($d = .91$, .90) than for girls and their friends ($d = .24$, .31).

Regression Analysis of Y2 Religiosity

We now turn to a regression analyses, presented in Table 3, predicting Y2 religiosity. This analysis included only those participants who had mutual friendships in both years, a restriction that was necessary because information on religiosity and problem behavior of friends was available only for these participants. In this analysis, all predictors were entered simultaneously. These results reveal that while controlling for sex, grade and Y1 religiosity, adolescents’ problem behavior and friends’ religiosity at Y2 added to the prediction of religiosity.

### Table 2 Correlations between measures by sex

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Religiosity Y1</td>
<td>–</td>
<td>.67**</td>
<td>– .33**</td>
<td>– .28**</td>
<td>.39**</td>
<td>.32**</td>
<td>– .30**</td>
<td>– .17**</td>
</tr>
<tr>
<td>2. Religiosity Y2</td>
<td>.55**</td>
<td>–</td>
<td>.33**</td>
<td>– .37**</td>
<td>.23**</td>
<td>.41**</td>
<td>– .27**</td>
<td>– .26**</td>
</tr>
<tr>
<td>3. Problem behavior Y1</td>
<td>– .16**</td>
<td>– .24**</td>
<td>–</td>
<td>.62**</td>
<td>– .34**</td>
<td>– .28**</td>
<td>.40**</td>
<td>.38**</td>
</tr>
<tr>
<td>4. Problem behavior Y2</td>
<td>– .15**</td>
<td>– .23**</td>
<td>.58**</td>
<td>–</td>
<td>– .22**</td>
<td>– .29**</td>
<td>.31**</td>
<td>.46**</td>
</tr>
<tr>
<td>5. Fr. religiosity Y1</td>
<td>.40**</td>
<td>.33</td>
<td>– .10**</td>
<td>.11**</td>
<td>–</td>
<td>.31**</td>
<td>– .38**</td>
<td>– .16**</td>
</tr>
<tr>
<td>6. Fr. religiosity Y2</td>
<td>.31**</td>
<td>.39</td>
<td>– .15**</td>
<td>.20**</td>
<td>.22**</td>
<td>– .28**</td>
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<td>– .33**</td>
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<tr>
<td>7. Fr. problem behavior Y1</td>
<td>– .15**</td>
<td>– .15**</td>
<td>.20**</td>
<td>.19**</td>
<td>.22**</td>
<td>– .28**</td>
<td>– .15**</td>
<td>– .33**</td>
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<td>8. Fr. problem behavior Y2</td>
<td>– .10**</td>
<td>– .24**</td>
<td>.11**</td>
<td>.32**</td>
<td>– .13**</td>
<td>– .27**</td>
<td>– .22**</td>
<td>–</td>
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</tbody>
</table>

Correlations for boys and girls are presented, respectively, above and below the diagonal. N’s are indicated by superscripts: 481, 312 2, 353, 354, 360, 403, 417, 418, 426, 43910, 47311, * $p < .5$, ** $p < .01$

### Table 3 Multiple regression analyses predicting Y2 religiosity

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$\beta$</th>
</tr>
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<tbody>
<tr>
<td>Sex</td>
<td>– .07</td>
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<tr>
<td>Grade</td>
<td>– .01</td>
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<tr>
<td>Religion (Y1)</td>
<td>.56**</td>
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<tr>
<td>Friend religion (Y1)</td>
<td>.01</td>
</tr>
<tr>
<td>Fr-religiosity (Y2)</td>
<td>.18**</td>
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<tr>
<td>Problem behavior (Y1)</td>
<td>– .02</td>
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<tr>
<td>Friend problem behavior (Y1)</td>
<td>– .04</td>
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<tr>
<td>Problem behavior (Y2)</td>
<td>– .10*</td>
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<td>Fr- problem behavior (Y2)</td>
<td>– .04</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.50**</td>
</tr>
</tbody>
</table>

$N = 715$. Significance levels are indicated by * $p < .5$, ** $p < .01$. Analyses included participants with reciprocal friendships at both Y1 and Y2

Categorical Analyses of Changes in Religiosity from Y1 to Y2

The regression analysis above is complicated because the continuous measure of religiosity was constrained by the existence of ceiling and floor effects. Individuals who consistently practice at Y1 have limited capacity to increase at Y2. Similarly, inconsistent practitioners at Y1 are constrained such that they cannot appreciably reduce their level of practice. To address these issues of floor and ceiling effects, we conducted analyses using the categorical measure of religiosity to assess those qualities that were associated with changes in religiosity from Y1 to Y2. For purposes of these analyses, the very consistent and consistent groups were combined. Four groups were thus created and the frequencies and percentages of these at Y1 and Y2 are presented in the Table 4. It is apparent that the religious practice of most participants was stable across the 2 years, but approximately 25% of the youth changed classifications. The reported frequencies and the subsequent analyses
were collapsed across grade and sex because Chi Square analyses failed to reveal significant sex or grade differences in the proportions of adolescents who reported stable or unstable religiosity.

We assessed the characteristics that differentiated those adolescents who maintained stable category membership from those who changed from Y1 to Y2. We first looked at those adolescents who were inconsistent in Y1 and compared those who remained inconsistent at Y2 with those who became consistent at Y2 using a series of t-tests. In Table 5 are the results from these analyses. A similar strategy was used to compare adolescents who were consistent at Y1 and remained consistent at Y2 with those who were consistent at Y1 but became inconsistent at Y2. These results are presented in Table 6.

Emerging from both sets of analyses are findings that the religiosity of friends and self problem behavior differentiated those who changed religiosity classification from those who did not. Those adolescents who were of consistent religiosity at Y1 and became inconsistent at Y2 had friends at Y2 who were lower in religiosity than did those who were of consistent religiosity both years. Stronger effects emerged from the analysis of those who moved from Y1 inconsistent to Y2 consistent religious status. Those who became more religious had friends who were more religious at both Y1 and Y2 than did those who were inconsistent both years. In the case of Y1 consistently religious youth, those who declined in religiosity and were classified as inconsistent in Y2 reported higher levels of problem behavior than those who were stable. As expected, the opposite pattern emerged for inconsistent religious youth; those who became consistent at Y2 reported lower levels of problem behavior at both years than those who were inconsistent in their level of religious practice at both Y1 and Y2. Similarly, lower problem behavior of friends in Y2 in the Y1 inconsistent groups predicted a change from inconsistent to consistent religiosity. Friends’ problem behavior, however, did not predict change for those in the Y1 consistent group.

### Discussion

This longitudinal study expanded the study of peer influence (Prinstein and Dodge 2008) to assess the possibility that the religiosity of adolescents’ friends contributes to explaining the changes in adolescent religiosity over time (King and Roesner 2009). Peer influence likely includes both selection effects, i.e., adolescents tend to befriend those who are similar to themselves, and socialization processes, i.e., peers influence each other. The first process is reflected in the similarity of friends on religiosity, and the second is seen in the contribution of having religious friends to changes in religiosity over time. Results from the present study provide some evidence of the presence of both processes. The religiosity of friends was associated with both concurrent levels of participants’ religiosity in addition to contributing to the prediction of changes in religiosity over a 1 year period. Analyses of concurrent associations reveal significant correlations for both boys and girls and for both grades between adolescents’ religiosity and that of their friends. Longitudinal regression results revealed that friends’ religiosity at Y2 was associated with changes in adolescent religiosity at Y2. For those adolescents who were inconsistent in their religiosity at Y1, having religious friends was associated with increases in religiosity at Y2. Similarly, those adolescents who were consistent in their religious practice at Y1 and had religious friends more often maintained this high level than were those whose friends were less religious. Thus, the findings from both concurrent and longitudinal analyses suggest that adolescents’ friends are similar to them in levels of religiosity and that these associations predict changes in religiosity.

Also emerging from this research are findings that adolescent problem behavior and the problem behavior of friends also were associated with concurrent religiosity and changes in religiosity over time. The mechanisms that underlie these associations are likely complex. Adolescents

<table>
<thead>
<tr>
<th>Table 4: Trajectories of change in religiosity</th>
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<tr>
<td>Year 1</td>
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<tr>
<td>--------</td>
</tr>
<tr>
<td>Inconsistent</td>
</tr>
<tr>
<td>Inconsistent</td>
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<tr>
<td>Consistent</td>
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<tr>
<td>Consistent</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 5: t Tests and effect sizes comparing adolescents who were inconsistent at years 1 and 2 with adolescents who were inconsistent at Y2 and consistent at Y2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y2-inconsistent</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Friend’s religiosity—Y1</td>
</tr>
<tr>
<td>Friend’s religiosity—Y2</td>
</tr>
<tr>
<td>Friend’s problem behavior—Y1</td>
</tr>
<tr>
<td>Friend’s problem behavior—Y2</td>
</tr>
<tr>
<td>Child problem behavior—Y1</td>
</tr>
<tr>
<td>Child problem behavior—Y2</td>
</tr>
</tbody>
</table>

Significance levels are indicated by * p < .5, ** p < .01
engaging in deviant behavior are likely to find companions
who engage in similar deviant behavior, and it is likely that
these adolescents exhibit lower levels of religiosity. Adoles-
cents likely experience tensions between secularism, with
the attractions associated with deviant behavior and
the constraints associated with adhering to religious rules.
These tensions may be particularly pronounced in Ind-
onesia where adolescents are simultaneously exposed to
strong religious demands and the international youth cul-
ture. In Bandung, adolescents are exposed to the Western
media and alcohol and drugs are widely available. The
associations between adolescents and their friends with
respect to religiosity, however, does not appear to be
attributable solely to either personal levels of problem
behavior or the tendency of adolescents to associate with
deviant peers as the associations between adolescent reli-
giosity and that of their friends remained despite control-
ling for self and friends’ problem behavior.

The tendency of adolescents to develop friendships with
those who are similar to themselves in religiosity may be
extremely important for explaining the possible influence
of peers on religiosity. Youth who are religiously inclined
may associate with others who are likely to reinforce these
tendencies. Conversely, less religious youth may associate
with low religious peers who reinforce less religious
behavior. Thus, youth who are either highly religious or on
a trajectory to increase their religiosity are likely to find
like minded friends. Within these friendships, adolescents
likely influence each other to become increasingly religious
or to maintain a high level of consistent religious practice.
It is reasonable to imagine that religious adolescents
encourage their friends to pray, attend the Mosque, main-
tain fasting, or to engage in other religious behaviors.

These results are consistent with suggestions by King
et al. (2002) that the impact of peers on adolescent religi-
osity can be understood within a social capital model. There
are multiple ways that friends might promote religiosity.
King et al. (2002) suggest that peers promote religiosity
though modeling religious behavior. In addition, religious
friends are also likely to participate together in community
service, youth group, and religious activities (Smith and
Denton 2005), activities that may increase their prosocial
behavior and decrease their involvement in unsupervised
activity (Eccles et al. 2003). Religious friends may also
engage in conversations regarding religion and spirituality
with their friends and these interactions could be important
in the development of a religious identity (Fowler 1981). In
the present study, we were unable to explore the specific
aspects of friendship that were associated with changes in
religiosity, and this remains a task for future research. One
fruitful area of investigation might be to use the microan-
lytic techniques developed by Dishion et al. (1996) to
understand the processes that occur when adolescents and
their friends converse about religious issues.

Adolescents who did not have mutual friendships at
either Y1 or Y2 were excluded from the present analyses
and consequently the question remains about the extent to
which friendships are associated with the religiosity of
such youth. Excluded youth were, however, also embedded
in friendship relationships and peer networks. All but 27 of
the 176 excluded youth had mutual friendships at either Y1
or Y2 and all excluded youth had unilateral friendships
and almost all were identified as being a member of at least one
peer social network (French et al. 2011). There are mixed
reports regarding the characteristics of unilateral friends
and the extent to which these relationships have the same
impact as mutual friendships (Berndt and McCandless
2009). Based on the results of a meta-analysis of friendship
characteristics (Newcomb and Bagwell 1995), it is likely
that the mutually defined friends are closer than those
defined by unilateral nominations. In addition to friend-
ships, adolescents are involved with peers through their
associations in social networks and it appears that like
friendships, these are also comprised of youth who are
similar to each other in religiosity (French et al. 2011).
Thus, we hypothesize that peer relationships also are
associated with the religiosity of adolescents without
strong reciprocal friends, but the possibility remains that
these effects are somewhat reduced from those that
emerged for adolescents with mutual friendships.

### Table 6 $t$ Tests and effect sizes comparing adolescents who were consistent at years 1 and 2 with adolescents who were consistent at Y2 and inconsistent at Y2

<table>
<thead>
<tr>
<th></th>
<th>Y2-consistent</th>
<th>Y2-inconsistent</th>
<th>$t$</th>
<th>$SD$</th>
<th>$d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friend’s religiosity—time1</td>
<td>3.82</td>
<td>3.72</td>
<td>1.57</td>
<td>0.55</td>
<td>0.18</td>
</tr>
<tr>
<td>Friend’s religiosity—time2</td>
<td>3.81</td>
<td>3.65</td>
<td>2.58**</td>
<td>0.51</td>
<td>0.31</td>
</tr>
<tr>
<td>Friend’s problem behavior—time1</td>
<td>0.49</td>
<td>0.55</td>
<td>−1.43</td>
<td>0.47</td>
<td>−0.14</td>
</tr>
<tr>
<td>Friend’s problem behavior—time2</td>
<td>0.68</td>
<td>0.74</td>
<td>−1.19</td>
<td>0.54</td>
<td>−0.12</td>
</tr>
<tr>
<td>Problem behavior—time1</td>
<td>0.44</td>
<td>0.61</td>
<td>−3.74**</td>
<td>0.57</td>
<td>−0.30</td>
</tr>
<tr>
<td>Problem behavior—time2</td>
<td>0.60</td>
<td>0.83</td>
<td>−4.09**</td>
<td>0.62</td>
<td>−0.38</td>
</tr>
</tbody>
</table>

Significance levels are indicated by * $p < .5$, ** $p < .01$
Two limitations are particularly relevant to the present study. First, our ability to understand the causal role of friends’ on adolescent religiosity is compromised by our inability to test causal models with correlational data. Numerous alternative models exist in addition to those hypothesized here that might explain the present results. Second, complex data interdependencies exist in our data because individual adolescents were both primary participants and friends of other primary participants. Although we are confident that the association between the religiosity of adolescents and their friends exists despite controlling for these dependencies (French et al. 2011), it is important to both recognize these dependencies and to control for these in future research to the extent possible.

This study was conducted in West Java Indonesia among Muslim youth and consequently generalizations to other populations should be made cautiously. Adolescents in this study exhibited at least moderate adherence to religious practices, and they lived in neighborhoods and contexts within which most others were also Muslim. Furthermore, Islam in Indonesia is interwoven with culture and tied into collectivist patterns of behavior (Cohen et al. 2005; French et al. 2008; Snibbe and Markus 2002). Thus, there is an extreme contrast between the contexts within which youth in this study and youth in many Western cultures experience religiosity.

There are nevertheless compelling reasons to believe that friendships among youth in North America and Europe also develop between adolescents who are similar in religiosity and that these relationships may impact religiosity. Prior research conducted in the United States provides empirical support for this assertion (Gunnoe and Moore 2002; Regnerus et al. 2004). Religiously devoted youth tend to participate in organized clubs and activities (Smith and Denton 2005) and it is likely that friendships and social networks evolve from such involvement. Furthermore, the diversity of religious involvement and religious affiliation that is present in the U.S. might actually result in greater rather than less concordance between individuals and their friends. The restriction of variability present in Indonesia (all participants were Muslim and engaged at least to some extent in religious activities) is not present in U.S. populations.

The findings from the present study that adolescents befriend peers who are similar to themselves in religiosity, and that the religiosity of their friends contributes to explaining changes in their religiosity over a 1 year period, provides evidence of the existence of selection and influence process of friends with respect to religiosity (Wallace and Williams 1997). Elucidation of the mechanisms by which such peer selection and influence processes occur could provide important additions to models explaining how adolescent religiosity is connected with multiple aspects of social competence (e.g., King and Roesner 2009; Oser et al. 2006; Thomas and Carver 1990). We suspect that youth tend to develop relationships with others who are similar to themselves in religiosity and these relationships impact behavior choices, values, and religious behavior through a variety of mechanisms including modeling, shaping, and activity selection. Further exploration of such mechanisms not only will contribute to the recent attempts to integrate the study of adolescent religious development within the corpus of empirical and theoretical work on adolescent development (King and Roesner 2009; Oser et al. 2006; Roehlkepartain et al. 2006), but also is likely to enrich our understanding of the role of peer relationships in adolescent development (Prinstein and Dodge 2008).

References


Author Biographies

Doran French is a Professor and Department Head in the Department of Child Development and Family Studies at Purdue University. He received his Ph.D. in Child Development for the University of Minnesota in 1980. His major research interests include peer relationships, cultural psychology, and social competence.

Urip Purwono is a senior lecturer in the Department of Psychology, Padjadjaran University located in Bandung, Indonesia. He received his Ph.D. in Psychology/Psychometrics from the University of Massachusetts, Amherst, USA in 2004. His research interests include test construction, statistics and methodology and adolescent development.

Airin Triwahyuni is completing her MA in clinical psychology in the Department of Psychology, University Padjadjaran.