

The Difference Catholic Makes: Catholic Faculty and Catholic Identity

D. PAUL SULLINS

This study examines, for the case of Catholics, the thesis that a “critical mass” of devoted faculty members—50 percent or more, according to the papal document Ex Corde Ecclesiae—serves to promote or preserve the religious character of religiously affiliated institutions of higher education. Factor analysis and structural equations are employed to analyze a random sample of faculty members (n = 1,290) and institutional profiles (n = 100) of American Catholic colleges and universities. Catholic faculty show higher support for Catholic identity in latent structures of aspiration for improved Catholic distinctiveness, a desire for more theology or philosophy courses, and longer institutional tenure. Institutions having a majority of Catholic faculty exhibit four properties consistent with stronger Catholic identity: a policy of preferential hiring for Catholics (“hiring for mission”), a higher proportion of Catholic students, higher faculty aspiration for Catholic identity, and longer faculty tenure in the institution. These latter two characteristics are not due simply to aggregation, but are stronger, on average, for Catholic faculty when they are in the majority. Preferential hiring marks Catholic identity, but is ineffective to increase the proportion of Catholic faculty. I conclude that the prediction of the critical mass thesis is correct.

INTRODUCTION

Roman Catholic and Protestant evangelical colleges and universities in the United States are currently engaged in a lively discussion over the strength and nature of their religious identity. At issue is whether they are likely to succumb, or have already succumbed, to the attenuating forces of secularization that evaporated the religious distinctiveness of mainline Protestant educational institutions a century ago. The discussion is marked by wide diversity of opinion over the extent of the problem and the nature and feasibility of possible remedial actions. There has been broad agreement, however, that where the personal commitment of the faculty to the religious distinctiveness of the university is weak, the university is not likely to maintain a strong religious character for long. The great majority of both Catholic and evangelical scholars have asserted that the religious identity of a university must be carried by a “critical mass” of committed faculty members.

A Critical Mass

For Catholics, the notion of a critical mass was crystallized by the appearance of Pope John Paul II’s 1990 apostolic constitution *Ex Corde Ecclesiae* (“From the Heart of the Church,” hereafter ECE; for text, see Gallin 1992:413–37 or www.vatican.va). This document enforced new, stricter requirements for colleges and universities that call themselves Catholic, touching off a spate of discussion, policy review, and church politicking as America’s 230 Catholic post-secondary institutions, along with the Catholic bishops, worked out how to apply the new norms in the United States (for reviews, see Dwyer and Zech 1998; Langan 1993; Hesburgh 1994). Among other things, ECE required: “In order not to endanger the Catholic identity of the University or Institute of Higher Studies, the number of non-Catholic teachers should not be allowed to constitute a majority within the Institution, which is and must remain Catholic” (ECE II:4.4).

D. Paul Sullins is an Assistant Professor, Department of Sociology, The Catholic University of America, Washington, DC 20064. E-mail: Sullins@cua.edu

In stark contrast to other norms of ECE, this requirement met with little resistance from Catholic institutions. Although often objecting to the rigidity of a juridical requirement and usually declining to specify an exact proportion, Catholic academics on all sides of the larger debate quickly developed an “emerging consensus” (Steinfels 1995) that to maintain the identity of Catholic universities required at minimum “a committed critical mass of Catholic faculty members” (Curran 1997:108; for similar statements advocating a critical mass, see also Buckley 1993; Hehir 1993; Komonchak 1993; McBrien 1994; O’Brien 1994; for a dissenting view, see Haughey 1996). Indeed, while most of the debate over ECE has focused on its requirement for theological faculty to be certified by the local bishop, there has been a growing recognition that “much ink has been spilled and energy expended over the question of the theological mandate, but perhaps the Catholicity of the faculty is, in the long run, more important for the Catholic identity of the university” (Tekippe 1997). Support for the critical mass principle has not only been, so to speak, academic. Spurred by the coming implementation of ECE—the new norms formally took effect in 2001—some Catholic universities have considered or implemented policies of hiring preferences, known as “hiring for mission,” designed to increase the number of Catholics on the faculty.

In spite of—or perhaps because of—the consensus among Catholic academics regarding a critical mass, there has been scant justification, either theoretical or empirical, for this particular sociology of religious university faculties. Some may feel that the issue is made moot for Catholics by the imposition of ECE’s de facto standard of a Catholic-majority faculty (hereafter CMF). However, this has not prevented intense scrutiny and dissent regarding other provisions of ECE; and it would be inconsistent with ECE’s own principles, which strongly affirm the importance of independent, autonomous inquiry on the part of scholars, to object to applying such an examination to the claims of ECE itself. More likely, theoretical resources have been reserved for the more contentious issues. Empirical examination of the idea of a critical mass has also been impeded by the lack of suitable data on Catholic universities. Recently, however, data have come to light that lend themselves well to such an analysis. The purpose of the present study is to examine these data to discover what effect, if any, a critical mass of faculty has on the characteristics of a Catholic university.

PLAN OF THE STUDY

For simplicity, I take for my hypothesis ECE’s stated assumption that a majority (or technically, nonminority) of Catholic faculty constitutes a critical mass. This standard is about in the middle of the range of other proportions, about equally above and below 50 percent, that have been proposed for a critical mass to exist.¹ And since ECE’s 50 percent standard is the de facto norm for Catholic universities, this choice of hypothesis is the most practical.

ECE’s norm, and the critical mass thesis more generally, implies two corollary hypotheses.

- A. *Catholic faculty will be more supportive of Catholic identity than non-Catholic faculty; and*
- B. *Institutions having a majority (or, more generally, a critical concentration) of Catholic faculty are more supportive of Catholic identity, or the preservation of Catholic distinctiveness, than those that do not.*

Hypothesis A constitutes a straightforward psychological prediction about Catholic faculty members. Hypothesis B simply makes a related summary prediction. An increase in supportive faculty members will predictably lead to a more supportive institution in the aggregate. Setting a CMF at a higher or lower proportion of Catholic faculty reflects, in this view, a judgment about the relative strength of support by Catholic faculty and the nature of institutional decision making. If one conceives that Catholic faculty support Catholic identity much more strongly than non-Catholic faculty oppose it, and/or that university institutional structures are more centralized than not, then one might set a CMF at a lower proportion. Thus ECE’s assertion that a majority

Catholic constitutes a CMF would reflect a judgment that, at least on average, the differences between Catholics and non-Catholics on issues of identity were exactly at equilibrium and that university governance structures were essentially democratic, that is, ruled by simple majority.

However, the critical mass thesis also suggests a stronger, sociological proposition: that a CMF has an effect on the institution's identity over and above the sum of each faculty member's contribution to that identity. At critical mass, emergent properties assure that the whole becomes greater than the sum of the parts. If this is not the case, the critical mass thesis loses a large part of its logical force. If the increase in Catholic identity is due simply to the aggregation of more Catholic faculty members, then why speak of that aggregation as becoming "critical" at some point? Moreover, if a CMF did not provide added value above aggregation to the institution's identity, then a majority of Catholics would not assure the maintenance of a Catholic identity. For that result, the optimum concentration of Catholics would be 100 percent. For this "strong" sociological form of the critical mass thesis to be supported, then, I propose that a third hypothesis must also hold true.

C. Faculty in CMF institutions will be more supportive of Catholic identity than those in non-CMF institutions.

This hypothesis merely claims that the emergent properties of a CMF will be reflected in a greater intensity as well as aggregation of support for Catholic identity. It does not require us to believe that the greater intensity causes or even actually brings about increased Catholic identity, though that seems likely.

I proceed to test ECE's norm, therefore, by comparing the differences between non-Catholic and Catholic faculty as they relate to issues of Catholic identity (to test Hypothesis A), and the differences between Catholic universities that have a CMF and those that do not (to test Hypothesis B). If no differences or only small differences pertain for both A and B, we can conclude that the attainment of a CMF has little to do with the Catholic identity of the institution. On the other hand, higher support for Catholic identity by Catholic faculty and among CMF institutions would support the weak form of the critical mass thesis. Mixed results for A and B would indicate that other institutional factors, not faculty, are the decisive factors in the institution's identity, either (if A supports the hypothesis but B does not) suppressing the heightened interests of Catholic faculty or (if B supports the hypothesis but A does not) asserting Catholic identity in the face of their indifference. If both Hypotheses A and B are supported, I will test Hypothesis C by comparing faculty while controlling for CMF institutions. If this procedure specifies their level of support for Catholic identity, Hypothesis C will be supported, providing evidence that a CMF induces emergent properties in support of the Catholic identity of a university.

Note that this plan of study involves mixing levels of analysis to examine faculty issues, institutional issues, and a combination of the two. This unusual procedure is made possible, without problems of ecological redundancy, by the availability of data from an unusual, well-designed survey of Catholic universities that was administered in a coordinated way at both the faculty and institutional level.

DATA

Data for this study are derived from a comprehensive survey of Catholic post-secondary institutions and their faculty commissioned in 1995 by the Association of Catholic Colleges and Universities. The study's principal investigators, Judith Dwyer and Charles Zech, have reported elsewhere (Dwyer and Zech 1996) the design and procedure of the study; I will only summarize their account here. The survey was conducted in two phases. First, a preliminary questionnaire solicited factual profile information from official institutional sources. This baseline instrument was sent to all 207 eligible Catholic universities and colleges in the United States; 153 (74 percent) were returned. In the second phase, a random sample, stratified by size and region, of

100 of the institutions was drawn, and surveys were sent to 30 faculty members selected at random from each institution. Forty-four percent (1,290) of the sampled faculty members returned usable questionnaires.

The result of this careful design is a body of data that represent very closely the faculty of Catholic colleges and universities. The margin of sampling error in a sample this size is only plus or minus 1.3 percentage points. Importantly, there is no observable institutional bias in the faculty's response. All sampled institutions had responding faculty members, and the within-institution mean response rate was 43.3 percent, an amount indistinguishable from the overall mean in a sample of this size.

Well-constructed Likertized questions on the faculty survey solicited detailed opinions about curriculum, faculty development, and the Catholic identity of the institution, as well as demographic characteristics. I employed factor-analytic and structural equation statistical models to examine the institutional questions of interest in this study. Methods and questions pertinent to the present analysis are presented in the course of the discussion below. Dwyer and Zech (1996, 1998) and Zech (1999) provide excellent comprehensive reports and interpretation of the univariate and bivariate findings of the survey, to which the interested reader is referred.

ANALYSIS AND DISCUSSION

To clarify the findings, each section of the analysis is preceded by a summary, in italics, followed by a more detailed examination of the component survey items or analyses.

Faculty Characteristics and Effects (Individual Level)

Confirming Hypothesis A, Catholic faculty expressed stronger support than non-Catholics for the institution's religious identity and less opposition to required theology or philosophy courses. They also had longer institutional tenure.

Three groups of questions on the faculty survey assessed attitudes toward the Catholic identity of the institution; curriculum recommendations; and demographic and professional information. In a series of tables, Dwyer and Zech (1996) compare Catholics and non-Catholics on many of the individual variables in these groups. To extend the comparison, I employed factor analysis on each of the three groups of questions. Missing values were imputed using standard techniques.²

Attitudes Toward Catholic Identity

Catholic faculty showed stronger support than non-Catholics for the institution's religious identity. They had only slightly higher approval of the institution's current religious identity, but much higher aspiration for the potential improvement of its religious character.

A set of 14 items on the survey (see Table 1) asked faculty members about their attitudes toward the Catholic identity of their institution. Each item was presented as a statement, to which the respondent was invited to indicate his or her relative agreement on a six-point scale ranging from "Strongly Disagree" to "Strongly Agree." As Dwyer and Zech (1996) report, Catholic faculty expressed higher agreement than non-Catholic faculty (significantly different by *t*-test at 0.05) with eight of the statements, indicated in Table 1 by an asterisk (*). Catholics tended to agree more strongly, for example, that Catholic values should be taught across the curriculum, or with the statement, "I feel connected to the Catholic mission of my institution." This latter item garnered the strongest mean agreement from Catholics (4.5); the former showed the largest mean difference between Catholics and non-Catholics (1.45 points on the six-point scale).

On one item, "Only Catholics should be hired for teaching positions at my institution," 86 percent of the respondents indicated the strongest possible disagreement (6), and the remaining 14

TABLE 1
FACTOR ANALYSIS OF FACULTY OPINION ITEMS

Component Variables	Factor Loadings	
	Factor 1: “Approval”	Factor 2: “Aspiration”
A. In general, faculty at my institution feel connected to its Catholic mission.	0.78	—
B. The faculty of my institution value its Catholic identity and mission.	0.75	—
C. *I feel connected to the Catholic mission of my institution.	0.73	—
D. In general, faculty at my institution try to make a connection between their personal religious faith and their teaching and research.	0.70	—
E. *Catholic values are taught across the curriculum at my institution.	0.68	—
F. *My institution supports the attempt by faculty to make a connection between their personal religious faith and their teaching and research.	0.66	—
G. The students of my institution value its Catholic identity and mission.	0.61	—
H. *When I was hired, I was adequately informed about the importance of the Catholic nature of my institution.	0.61	—
I. *My institution provides adequate ongoing faculty development with regards to its Catholic nature.	0.51	-0.46
J. *The Catholic literacy among the students at my institution is high.	0.51	-0.51
K. *In general, faculty at Catholic institutions should try to make a connection between their personal religious faith and their teaching and research.	—	0.78
L. *I try to make a connection between my personal religious faith and my teaching and research.	0.48	0.76
M. *Catholic values should be taught across the curriculum at my institution.	0.46	0.64
Percent variance explained	32.3	26.0

*Indicates a mean difference (statistically significant at 0.05) between Catholics and non-Catholics on this question, following Dwyer and Zech (1996).

percent disagreed slightly less strongly (5). Since opinion on this item was essentially unanimous, it was not considered in subsequent analysis nor included in Table 1.

Factor analysis was applied to the remaining items in order to examine possible themes in the faculty opinions. I computed the widely used principal components solution, applying the Kaiser criterion.³ Two factors were extracted, accounting for an acceptable 38.3 percent of the correlations among the 13 items. I used a cut-off factor loading of 0.45, which is more rigorous than the widely used 0.30 rule of thumb because the loadings on the factors were unusually strong. In fact, all the items loaded on one of the two factors at above 0.50, but there were significant cross-cutting loadings at just below that threshold for the second factor. Ten items (the first 10 listed in Table 1) loaded on the “larger” factor, accounting for almost a third (32.3 percent) of the total variance, which also had strong secondary loadings on two additional items (shown in the bottom two lines of Table 1). The loadings ranged from 0.78 to 0.51, and are presented in the table in descending order of strength. The strongest loadings on this factor were for items having to do with a sense of being connected with the Catholic identity and mission of the institution. Three of the four top-loading items use the word “connect” or “connection.” More broadly, this factor conveys a sense of affirmation of the Catholic mission of the institution and a perception of faculty involvement in that mission. I therefore interpreted this factor broadly as one of general approval and support for Catholic identity and mission. For convenience it is tagged “Approval” in the table and subsequent discussion.

The second opinion factor, by contrast, conveys a less glossy appraisal of the institution's success in attaining its Catholic mission, coupled with a strong sense of room for improvement. All the items loading on Factor 1 are in the indicative; all of the items loading on Factor 2 are in the subjunctive. As a body of opinion, Factor 2 agrees most strongly that faculty should try to connect their personal faith and their teaching and research (Item K in Table 1), and that the respondent personally tries to do so (L). However, it fails to affirm that faculty in general at the respondent's institution do so (D), nor that the respondent does feel connected to the institution's Catholic mission (C). And its assessment is strongly negative regarding faculty development in Catholic identity (I) and student Catholic literacy (J). Although Factor 1 affirms that Catholic values are taught across the curriculum, Factor 2 loads higher on the opinion that Catholic values should be taught across the curriculum. I interpreted Factor 2, then, as indicating a general sense of aspiration to improve the Catholic identity of the institution and faculty involvement in it. It is labeled "Aspiration." This represents a substantial body of opinion, accounting for over a quarter (26 percent) of the variance.

This interpretation of the factors is buttressed by the fact that on two key items these factors have substantial loadings in opposite directions. The Approval factor agrees that faculty development regarding the institution's Catholic nature is adequate (0.51 loading), and that students' Catholic literacy is high (also 0.51). The Aspiration factor denies these statements just as strongly (-0.46 and -0.51, respectively). The two constructs, therefore, disagree starkly regarding whether these important goals have already been attained.

Consistent with the high factor scores, both sets of items were highly scalable. Cronbach's alpha was 0.85 for the 10 items loading on Approval, and 0.86 for the three items loading on Aspiration. As Figure 1 shows, the additive mean for Catholic faculty is higher than non-Catholic faculty on both Approval and Aspiration. Both differences are significant at 0.05, but the magnitude of the difference is very small for Approval (0.15) while quite large for Aspiration (1.3). In standardized terms, the difference in Aspiration, at 0.80 standard deviations, is almost four times that of Approval, at 0.21 standard deviations.

Catholic faculty, evidently, have much higher hopes and goals regarding the institution's Catholic character than their non-Catholic counterparts. The important difference between them lies not in their approval or satisfaction, but in their level of aspiration for the Catholic identity of the institution. It is not that Catholic faculty are more critical; they are slightly more approving than non-Catholics. Rather, it appears that Catholic faculty are much more likely than non-Catholics to have an appreciation for what the institution could become, if it were to have a stronger Catholic identity, as well as for what it already is.

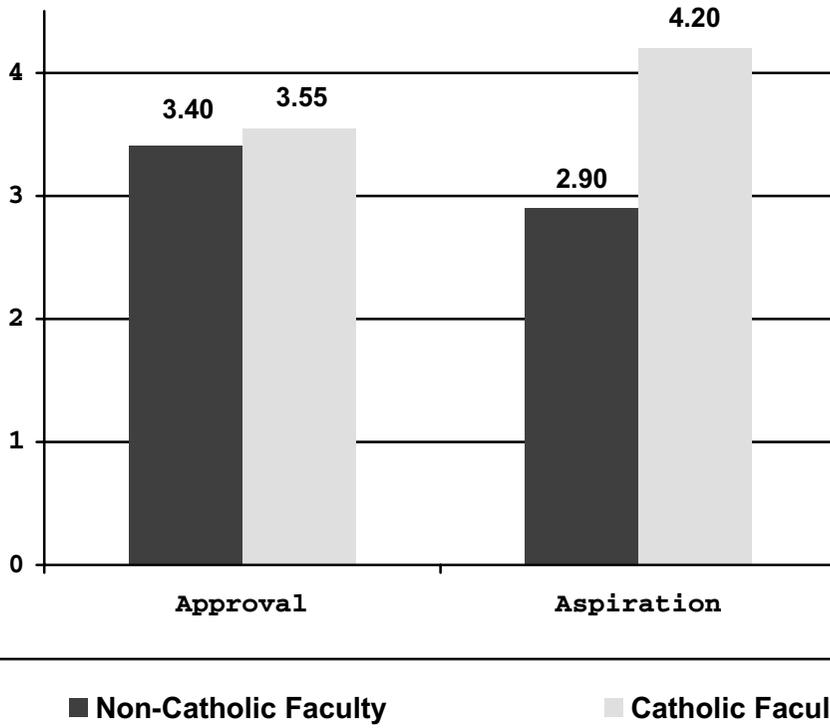
Curriculum Requirements: Theology/Philosophy

Catholic faculty members were much less opposed (than were non-Catholics) to required theology or philosophy courses. However, a majority of both Catholics and non-Catholics opposed any required courses in this area. The minority supporting them agree that three courses is enough.

Seven items on the faculty survey were of the form: "Students at my institution should be required to take more _____ courses than are currently required." In the blank for respective questions were Theology/Religion, Philosophy/Ethics, Gender Studies, Ethnocultural Studies, Peace and Justice, and Global Awareness. A similar item asked about community service requirements.

Factor analysis extracted two very distinct factors that together accounted for a hefty 72 percent of the variance in these seven items. The results are presented in Table 2. The items show extremely high loadings, ranging from 0.64 to 0.93, on the two factors, as well as high commonalities (all but one was above 0.66), indicating a high level of agreement among the opinions comprising each factor. Factor 1 (Theo/Phil) appears to be a construct consisting of higher approval of more required theology/religion and philosophy/ethics courses. This stands in

FIGURE 1
INSTITUTIONAL APPROVAL AND ASPIRATION, COMPARING CATHOLIC AND NON-CATHOLIC FACULTY



*** Shown is the mean value on the six-point Likert items comprising each factor.**

contrast to approval, expressed by Factor 2 (Other or Social Justice), of increased requirements in all the other areas. The other areas all have to do with social or cultural diversity or inequality, and may reflect a social justice agenda. However, these comprise the only other options on the survey besides theology and philosophy.

Faculty opinion about required theology or religion courses is directly related to issues of Catholic identity, since the distinctive character of Catholic education is often thought to be carried by courses in these areas. Figure 2 shows the frequencies for this item. Two features of this set of opinions stand out. First, it is notable that the majority of cases (54 percent) are found on the extremes of the distribution. Both for those agreeing (responding 4, 5, or 6) or disagreeing (responses of 1, 2, or 3) with the item, the modal response is the strongest possible one. This unusual polarization of opinion indicates that this issue is one of dissensus and likely controversy among the faculty of Catholic universities.

Second, the prevailing view toward more required theology/religion courses is one of opposition, not approval. Overall, 80 percent of the faculty indicated some level of disagreement with the statement that more courses in these areas should be required. The level of disagreement was lower among Catholic faculty (73 percent) than non-Catholic faculty (92 percent), and in institutions with fewer required courses already, but it was still a strong majority. The lowest level of disagreement (61 percent) was found among Catholic faculty in institutions that currently have no required theology or religion courses. Nonetheless, most faculty—Catholic or not—at most Catholic universities do not feel that any theology or religion course should be required.

TABLE 2
FACTOR ANALYSIS OF SUGGESTED COURSE REQUIREMENTS (7 ITEMS)

Component Variables	Factor Loadings	
	Factor 1: Theo/Phil	Factor 2: Other or Social Justice
Students at my institution should be required to take more THEOLOGY/RELIGION courses than are currently required	0.93	—
Students at my institution should be required to take more PHILOSOPHY/ETHICS courses than are currently required	0.90	—
Students at my institution should be required to take more GENDER STUDIES courses than are currently required	—	0.84
Students at my institution should be required to take more ETHNIC/CULTURAL STUDIES courses than are currently required	—	0.88
Students at my institution should be required to take more PEACE AND JUSTICE courses than are currently required	—	0.86
Students at my institution should be required to take more GLOBAL AWARENESS courses than are currently required	—	0.82
Students at my institution should be required to perform more COMMUNITY SERVICE than is currently required	—	0.64
Percent variance explained	23.3	49.1

FIGURE 2
PERCENTAGE FREQUENCY RESPONSES TO “STUDENTS AT MY INSTITUTION SHOULD BE REQUIRED TO TAKE MORE THEOLOGY/RELIGION COURSES THAN ARE CURRENTLY REQUIRED,” ON A 6-POINT SCALE FROM 1 (STRONGLY DISAGREE) TO 6 (STRONGLY AGREE)

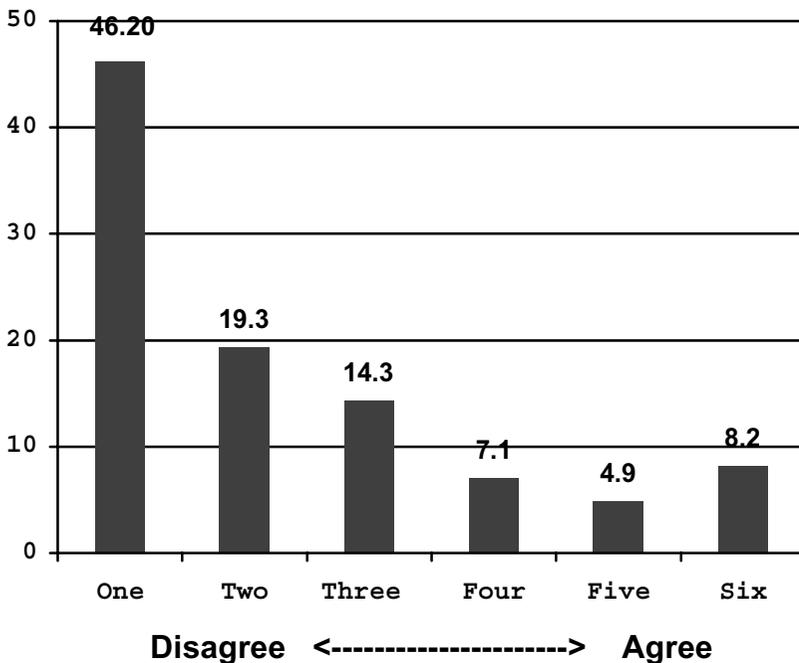


FIGURE 3
PERCENT IN FAVOR OF MORE REQUIRED THEOLOGY OR RELIGION
COURSES, BY NUMBER OF COURSES CURRENTLY REQUIRED, COMPARING
CATHOLIC AND NON-CATHOLIC FACULTY

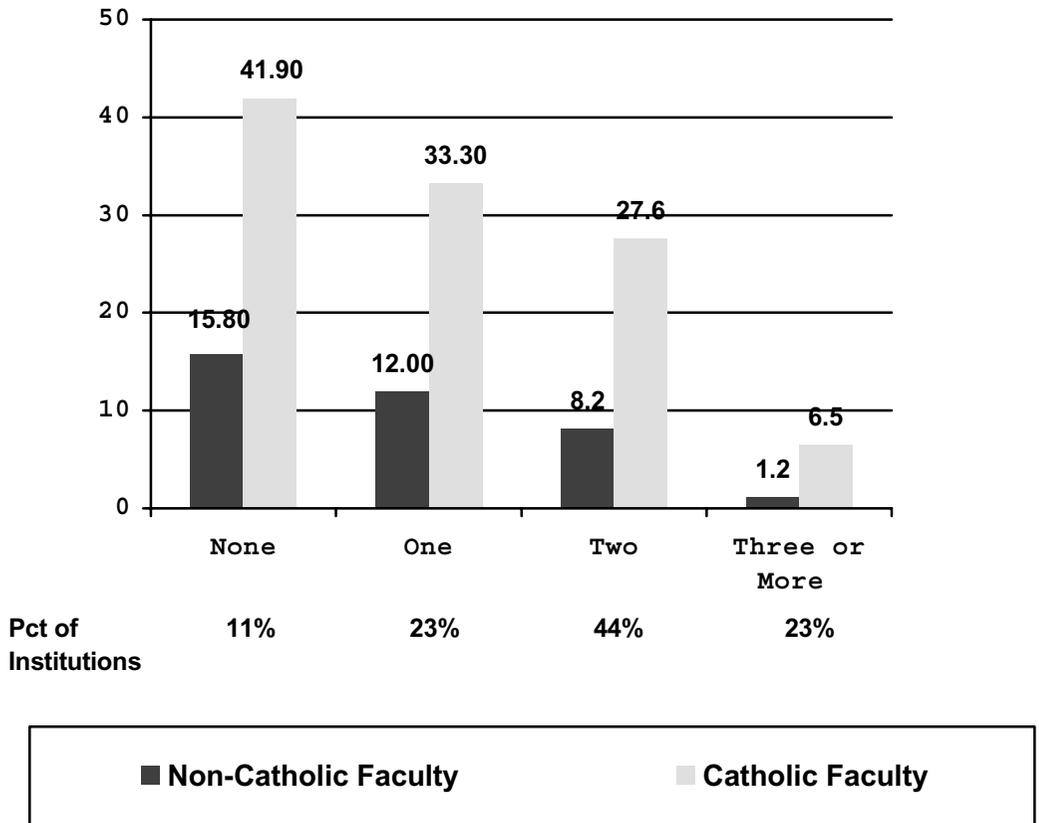


Figure 3 compares Catholic and non-Catholic faculty on approval of more theology/religion courses by the number of courses currently required. Two features of this comparison are worth noting. First, at all levels of course requirements, there is a strong difference between Catholic and non-Catholic faculty. Overall, Catholic faculty are about three times as likely to feel that more theology or religion courses should be required. Not surprisingly, as the number of courses that are currently required increases, the proportion of faculty in favor of more required courses diminishes—but the difference between Catholic and non-Catholic faculty grows even larger. In institutions with no required theology/religion courses, Catholic faculty are 2.7 times as likely to agree that more should be required; in universities with three or more required theology/religion courses, although the proportion of faculty who think that more courses should be required is much smaller, Catholic faculty are 5.4 times as likely as non-Catholic faculty to do so.

Second, among the minority advocating more courses, there is an effective consensus that three required courses in this area is enough. Those faculty who responded 4 or higher on the six-point Likert scale for the item (see Figure 2) were taken to indicate some level of approval. As Figure 3 demonstrates, as the number of required courses increases, the level of support among the faculty, both Catholic and non-Catholic, diminishes gradually from zero to two courses, and then drops to almost nothing. Among Catholic faculty, for example, a quarter or more support more required theology or religion courses when their institution currently requires two or fewer; when three or more are currently required, only 7 percent are in favor of more. Except for a

small fraction, even the minority of faculty who advocate more required courses in this area seem satisfied when there are at least three.

Although the community service question had a respectably high loading (0.64) on the “Other” factor, it had distinctly lower commonality (0.47; the next lowest was 0.67) and higher mean approval than any of the other variables. The fact that it loads with “Other” and not “Theo/Phil” is particularly interesting, since among these seven items Catholic faculty have higher mean approval on three: Theology/Religion, Philosophy/Ethics, and Community Service.⁴ A full investigation of faculty opinions about community service lies beyond the scope of the present study, but I note in passing that it appears to play a complex and influential role in faculty opinion with respect to Catholic identity.

Institutional Tenure

Zech (1999:14) found older and longer-tenured faculty to be more supportive of Catholic identity. However, this apparent relationship is due entirely to the fact that Catholics tend to have longer tenure, and thus are a much larger portion of the senior than the junior faculty. When Catholics and non-Catholics are analyzed separately, there is no correlation of seniority (nor of age or professional tenure) with support for Catholic identity in the survey responses. Catholic faculty qua Catholic faculty are more supportive of a Catholic institution, regardless of age, tenure, or seniority.⁵ Below, I argue that the longer tenure of Catholic faculty has important implications for “hiring for mission” policies.

Catholic-Majority Faculty Effects (Institutional Level)

A Preliminary Question: What Proportion of Faculty are Catholic?

To compare CMF and non-CMF institutions, it is necessary to determine what proportion of the faculty members of Catholic institutions are Catholic. Surprisingly, this number, presumably pertinent to the current discussion of a critical mass and ECE’s implementation, has never actually been estimated before now. For sampled institutions, this information was apparently very sensitive, because nonresponse from the university presidents on this question was so high (53 percent) as to render the baseline information on this point unusable by itself.⁶ Of the 100 institutions with both baseline profiles and responding faculty, only 34 were accompanied by an institutional estimate of the proportion of Catholic faculty. However, an alternative estimate, covering all 100 sampled institutions, is readily available: 96 percent of the responding faculty randomly sampled from these institutions reported their own religious affiliation.

To compensate for any response bias and ensure that the proportion of Catholic faculty was not overestimated, I standardized the mean of the faculty reports to the (smaller) institutional mean.⁷ By this adjusted measure, the proportion of Catholics among the faculty ranged in a nearly perfect normal distribution from 14 to 87 percent; the mean, both overall and within institutions, was exactly 50 percent. Exactly half the institutions have a CMF. Two-thirds (68 percent) have faculties that are at least 40 percent Catholic.

It is worth noting that even by this conservative count there does not appear to be a large or systematic shortage of Catholics on the faculties of Catholic universities, as is sometimes claimed. On the contrary, most have a majority or near-majority of Catholics. Over 90 percent of Catholic universities have a higher concentration of Catholics than appear in the general population (about 22 percent). These percentages, furthermore, reflect the situation in 1995, and are probably higher today. This finding provides support for a measured optimism regarding the state of Catholic faculties such as that of ACCU President Monika Hellwig: “Catholic higher education is alive and well in its corporate expression on our campuses—not everywhere, not always, not in every professor or administrator, but predominantly and very actively” (2001:24).

Fitting a Multivariate Model

Direct Effects Model

Confirming Hypothesis B, I found higher support for Catholic identity among CMF institutions than among those lacking a CMF. Four variables plausibly related to Catholic identity—faculty aspiration to improve Catholic identity, a hiring for mission policy, faculty tenure or experience, and the proportion of Catholics in the student body—are all significantly higher in CMF schools.

Since the composite character of CMF institutions (rather than single predictors) was of interest, I first attempted to derive a comprehensive multivariate model of Catholic identity associated with the presence or absence of a CMF in Catholic universities. To concentrate on the significant variation in the data, I aggregated by institution the factor scores derived above for faculty opinion, Catholic identity initiatives, and experience. Note that while the factor scores represent latent structures of opinion at the faculty level of analysis, the mean scores for each university are observed variables at the institutional level of analysis. To be retained in the model, a variable had to be both statistically significant by itself and significantly improve the overall model fit.

Only four effects met both of these tests. These are: faculty tenure or experience; the level of faculty aspiration to improve Catholic identity; a policy of hiring for mission; and the proportion of the student body that is Catholic. These four variables each have a robust and persistent association with CMF, and every combination of them improves significantly upon more parsimonious models. A model involving all four direct effects has an acceptable fit to the data: with a chi-square of 14.6 with 6 degrees of freedom, it accounts for 97.5 percent of the variation from independence in this sequence of models.

Table 3 reports the coefficients and characteristics of this model. Because it is more robust in the presence of missing data, the coefficients were estimated using a maximum-likelihood (ML) procedure involving the covariances of the variables, rather than the more common ordinary least squares (OLS) regression procedure. The coefficients shown are standardized for comparison among the effects. In general, each coefficient may be interpreted as the change in the effect

TABLE 3
STANDARDIZED MAXIMUM-LIKELIHOOD COEFFICIENTS OF
STRUCTURAL EQUATION MODELS OF THE INSTITUTIONAL EFFECTS
OF A CATHOLIC-MAJORITY FACULTY (CMF)

	Direct Effects Model	Interactions Model
<i>Effect of CMF on</i>		
A. Faculty experience/tenure	0.39	0.37
B. Faculty aspiration for Catholic identity	0.32	0.28
C. "Hiring for mission" policy	0.23	0.22
D. Percent Catholic of the student body (per 5% increase)	0.22	0.21
Correlation of faculty experience and aspiration	—	0.21
Effect of faculty aspiration on hiring for mission policy (with disturbance term)	—	0.27 (0.96)
Model disturbance term	0.80	0.78
Chi-square, degrees of freedom	14.6, 6	5.5, 4
CMIN/DF	2.4	1.4
Normed fit index	0.97	0.99

associated with the presence of a CMF, net of all the other effects. The disturbance terms, comparable to the intercept in a typical regression equation, reflect variance that is not explained by the model or the data collected. Its large size relative to the other effects reminds us that there are many effects or influences on a CMF that were not captured by the survey.

The robust positive association with a CMF and the large amount of variance explained by these four variables provides initial confidence that Hypothesis B is true. The four effects of the model are all substantively related to Catholic identity, and the sign on all of them is positive, that is, in the direction predicted by Hypothesis B. Consistent with the findings above, faculty tenure or experience is strongly associated with having a CMF. With a coefficient of 0.39, this is the strongest of the four direct effects. Faculty aspiration to improve Catholic identity, the aggregate of the factor score derived above, is significantly associated with a CMF; but none of the other opinion factors are. Having a CMF does not appear to make much difference for faculty opinion on issues other than specific aspirations regarding the institution's Catholic identity. A hiring for mission policy and the proportion of Catholic students, both institutional characteristics, have smaller associations with a CMF.

Interactions Model

The very close fit of a model including interactions among the four effects provides strong support for the critical mass thesis in its "weak" form.

In this class of models, strength and fit is assessed not only by improvement from independence but also by conformity to the observed effects in the data. On this second measure, the direct-effects model still has room for improvement. Chi-square for the model (14.6) divided by the degrees of freedom (6) is 2.4. This ratio (notated CMIN/DF) provides the most commonly accepted measure of the discrepancy of the model from a perfect fit; the lower the value the lower the discrepancy, and the better fit the model has to the data. Although "different researchers have recommended using ratios as low as 2 or as high as 5 to indicate a reasonable fit" (Marsh and Hocevar 1985), there is clear consensus that a ratio less than 2 provides a strong indication of an acceptable fit (Byrne 1989).

Accordingly, I explored the fit of various interactions among the four effects to see if the model could be improved. I found two significant covariations, between experience and aspiration and between aspiration and a "hiring for mission" policy. The model that constrains these two associations, shown in Table 3, has a very close fit to the data. CMIN/DF for this model (5.5/4) is 1.4, well below the consensus critical value of 2.0. Similar results are obtained from a wide variety of related measures of fit. All the parameters of the model are significant at conventional critical levels.

The fit of this model establishes that a CMF is positively associated with the Catholic identity of a Catholic university. The critical mass thesis is true, at least in its "weak" form. Since there are large disturbance terms, we cannot conclude that these are the only effects of a CMF. However, it is not necessary to account for all the variation in CMF to establish that, among whatever other effects there may be, a CMF positively affects the Catholic character of Catholic institutions through these four factors.

Interpretation of the Model: The Difference a CMF Makes

Effects on Faculty

Catholic faculty in CMF institutions have higher support for Catholic identity than their counterparts in non-CMF institutions, providing evidence for the critical mass thesis in its "strong" form.

As argued above, the “strong” form of the critical mass thesis implies that at some level of predominance of Catholic faculty there is an emergent, sociological change in the institution that is greater than merely the aggregate effect of additional Catholic faculty. If this is true, then, as Hypothesis C states, we would expect Catholic faculty in CMF institutions to have higher support for Catholic identity than Catholic faculty in non-CMF institutions. I found this to be the case.

To examine this question I compared Catholic (and non-Catholic) faculty members in CMF institutions with their counterparts in non-CMF institutions. Since aspiration for Catholic identity and tenure/experience were the two effects associated with faculty in the multivariate model, I compared the faculty members on opinion items comprising the Aspiration factor and tenure. To make any differences clear, and to remove any bias in the faculty proportion measure, I ignored cases within half a standard deviation of the mean of the distribution. This reduced the number of cases by 38 percent, but ensured that any CMF differences would not be obscured by the “noise” of cases very close to the mean and (since the mean is 49.6) to ECE’s critical mass threshold.⁸ The results are shown in Table 4, presented in descending size of the difference for Catholics. On 8 of the 14 opinion items on the faculty survey, there is a significant difference between CMF and non-CMF institutions in the opinions of Catholic faculty members, non-Catholic faculty members, or both. The differences, moreover, are all in the direction of higher support for Catholic identity among Catholics in CMF institutions, as predicted by the critical mass thesis.

In general, Catholic faculty in CMF schools have a more positive perception and appraisal of the institution’s religious mission. Catholic faculty in CMF institutions are more likely than those in non-CMF schools to agree that the faculty members value and feel connected to the institution’s Catholic identity and mission, that Catholic values are taught across the curriculum, and that faculty try to make a connection between their faith and their academic work. By contrast, for non-Catholic faculty, there is no difference between CMF and non-CMF schools on these items. In addition, tenure for Catholic faculty members averages 2.7 years longer in CMF institutions than in non-CMF ones, whereas there is no difference for non-Catholic faculty. The effect of CMF on retention is discussed further below. These results provide clear support for Hypothesis C and the strong form of the critical mass thesis.

Effects on the Institution

The effects of a CMF on the proportion of Catholic students and hiring for mission policies are consequential but not as straightforward as the effects on faculty. The proportion of Catholic students by CMF varies greatly with the size of the university. Hiring for mission has little influence on the proportion of Catholic faculty in the face of much stronger retention effects.

Two of the effects associated with a CMF—the proportion of Catholic students and a hiring for mission policy—do not directly involve faculty members.

Students. CMF universities attracted a higher proportion of Catholic students than did non-CMF ones. Although the beta for this effect is significant, its magnitude is quite small. Overall, 58 percent of the students of non-CMF schools were Catholic, compared to 62 percent of the students of CMF institutions. These averages understate the difference between the groups, however, in part because the relation between CMF and the proportion of Catholic students has a u-shaped association with the size of the student body. As Figure 4 shows, the association of CMF with a higher proportion of Catholic students is strongest for the smallest (less than 1,000 students) and largest (5,000 or more students) institutions. Among Catholic colleges or universities having between 1,000 and 5,000 students, non-CMF institutions have about the same or even a higher proportion of Catholic students than CMF schools. Although many non-CMF schools have a high proportion of Catholic students, the same is not true on the low end. Institutions having a student body that is less than half Catholics comprise only 10 percent of CMF schools, but make up

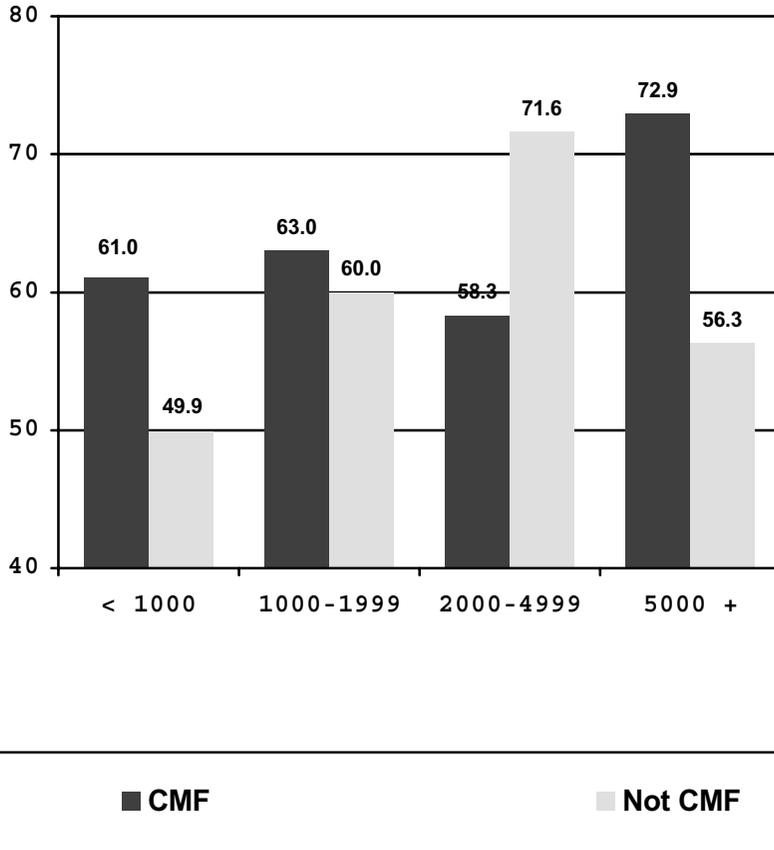
TABLE 4
INSTITUTIONAL EFFECT ON FACULTY OPINION SHOWING MEAN DIFFERENCE BY RELIGIOUS AFFILIATION, BY THE PRESENCE OR ABSENCE OF A CATHOLIC-MAJORITY FACULTY

Faculty Opinion Items	Catholic			Non-Catholic		
	Non-CMF	CMF	Difference	Non-CMF	CMF	Difference
A. *Catholic values should be taught across the curriculum at my institution.	3.78	4.21	0.43*	2.41	2.84	0.43*
B. The faculty of my institution value its Catholic identity and mission.	3.70	4.06	0.36*	3.94	3.88	-0.06
C. In general, faculty at my institution feel connected to its Catholic mission.	3.25	3.56	0.31*	3.44	3.45	0.01
D. *Catholic values are taught across the curriculum at my institution.	2.94	3.25	0.29*	2.71	2.89	0.18
E. In general, faculty at my institution try to make a connection between their personal religious faith and their teaching and research.	3.24	3.52	0.28*	3.03	3.14	0.11
F. Only Catholics should be hired for teaching positions at my institution.	1.39	1.58	0.19*	1.11	1.16	0.05
G. *When I was hired, I was adequately informed about the importance of the Catholic nature of my institution.	4.17	4.31	0.14	3.64	3.10	-0.54*
H. The students of my institution value its Catholic identity and mission.	3.79	3.76	-0.03	3.78	3.37	-0.41*
Average tenure at current institution (in years)	15.9	18.2	2.7	12.9	12.9	0
N	(151)	(320)		(217)	(72)	

*Next to statement, indicates that there is an overall mean difference between Catholics and non-Catholics on that item; *next to number indicates that the difference is significant at 0.05.

Note: Responses for all questions are scaled from 1 (Strongly Disagree) to 6 (Strongly Agree). Cases within 0.5 standard deviation of the mean are ignored.

FIGURE 4
PERCENT OF CATHOLIC STUDENTS IN CATHOLIC UNIVERSITIES BY SIZE OF STUDENT BODY COMPARING CMF AND NON-CMF INSTITUTIONS



31 percent of non-CMF ones. CMF universities, then, attract generally higher concentrations of Catholic students.

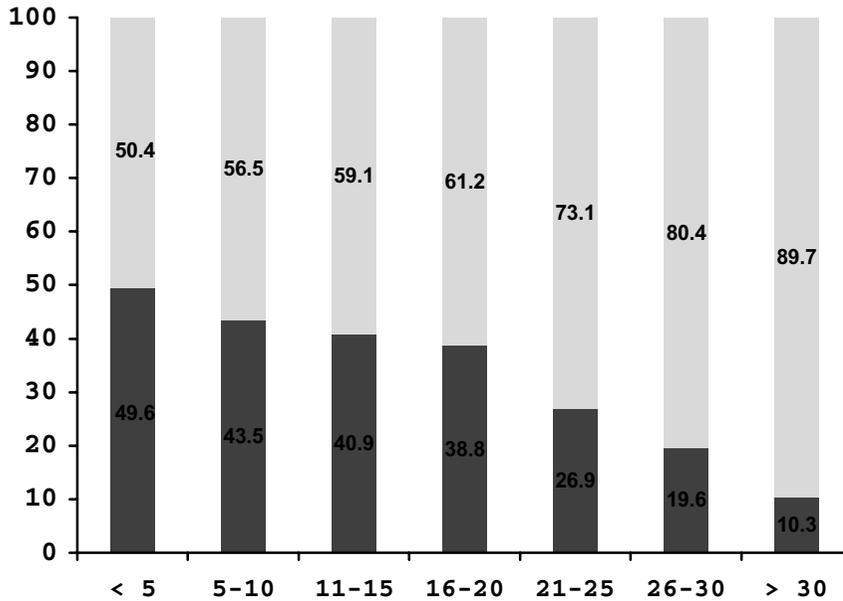
Hiring—or Retaining—for Mission

Hiring preferences for Catholic faculty have proliferated in the wake of ECE. Whether one favors or rejects a policy of hiring for mission, it has been nearly universally assumed that increasing the proportion of Catholic faculty necessarily involves some form of hiring preferences or screening. This assumption, however, is wrong.

As noted above, most (74 percent) of the surveyed institutions—and all surveyed faculty members—rejected the preferential hiring of Catholics. Yet almost all of them (90 percent) have a higher concentration of Catholics on the faculty than in the general population (25 percent). As already noted, half of them already have a majority of Catholic faculty. If Catholic universities reject preferential hiring, why do Catholics already largely predominate among their faculties? The data suggest that the answer lies not in the faculty they acquire, but in the faculty they keep.

The tendency of Catholic faculty to have longer institutional tenure has already been noted. Catholic faculty averaged 17.3 years of tenure, compared to only 12.9 years for non-Catholic faculty, a difference of 4.4 years.⁹ The effect of this relatively small difference, however, is that over time, by the operation of this single mechanism, Catholics come to predominate among the faculty by an overwhelming proportion. As Figure 5 shows, although new faculty consisted of

FIGURE 5
RELIGIOUS COMPOSITION OF FACULTY BY INSTITUTIONAL TENURE



How many years have you been teaching at your current college/university?



equal proportions of Catholics and non-Catholics, the more seniority a faculty member had in a Catholic college or university, the more likely it is that she or he was Catholic. For five-year categories of institutional tenure, the correlation between tenure and Catholic affiliation is 0.23; the corresponding predictive odds ratio from logistic regression is 1.32. This means that over a five-year period, non-Catholic faculty are about a third (32 percent) less likely to remain at the institution than are Catholics. This difference is cumulative: newly hired Catholic faculty are more than twice as likely as non-Catholic new hires to remain in a Catholic university for 15 years, and four times as likely to stay 25 years. The result is that while half of the new hires were Catholic, among those who had remained in the institution for the span of an entire career (more than 30 years), 90 percent were Catholic.

The trend in Figure 5, of course, is the net result of differential hiring and retention. Statistically, it could reflect a trend toward hiring more non-Catholic faculty in recent years. By all accounts, however, just the opposite has occurred, as Catholic institutions have become more concerned to hire more Catholics, not non-Catholics, in recent years. The association in Figure 5 is so strong that even a moderate decline in preference for Catholic new hires would still indicate longer retention of Catholics among seasoned faculty. To the extent that the recent trend in new hires has been toward hiring more Catholic faculty, as evidenced by an increase in hiring for mission policies, the effect of differential retention on increasing the proportion of Catholic faculty is even stronger than that shown in Figure 5.

It is also statistically possible that the results in Figure 5 reflect a response bias, such that longer-tenured Catholics were more likely to respond to the survey. However, there is no difference in the descriptive statistics of Catholics and non-Catholics by tenure. Eighty-eight percent of

responding faculty—both Catholic and non-Catholic—reported that they were hired as junior faculty, prior to academic tenure. Seventy-three percent have never taught at any other institution. Only 3 percent transferred to their institution as mature scholars, with more than 20 years of experience. All these proportions are the same (not significantly different at 0.05) for Catholics and non-Catholics.

The inescapable conclusion is that retention, not hiring, is by far the more pronounced factor promoting a predominance of Catholics among the faculty of Catholic colleges and universities. Hiring for mission policies may have other benefits for Catholic institutions, but in the face of such strong effects of retention, they can have little or no effect in increasing the proportion of Catholics among the faculty. A far more effective route to that end would be to address conditions that encourage Catholic faculty to leave an institution (or, perversely, non-Catholic faculty to stay) so as to increase the relative retention of Catholic faculty. This is true not only because the effects of retention are much stronger overall than those of hiring, but also because there is a lot of potential for improving the retention of Catholic faculty at many institutions. The correlation between Catholic affiliation and retention reported above (0.23 overall) varies greatly among the Catholic institutions sampled by the survey, from -0.50 to $+0.84$. For over a quarter of the institutions (28 percent) it is negative, indicating that in those institutions non-Catholic faculty members are more likely to be retained than Catholics.

If they are not very effective, why do hiring for mission policies persist? The interactions model, shown in Table 3, suggests an answer. Note that faculty aspirations regarding Catholic identity are expressed in part (0.27) through support for a hiring for mission policy. Such aspirations in turn are positively associated (0.21) with longer tenure. In CMF institutions, where such aspirations are higher, there is more support for hiring for mission policies among the faculty, who are usually active in the hiring process. This support may well be due to the false perception that such a policy will improve the proportion of Catholics on the faculty. It may also be the case that the presence of a Catholic preference for new hires sends signals to longer-tenured faculty about retention, discouraging non-Catholics and encouraging Catholics. As Table 4 reports, Catholic faculty do have longer average tenure in CMF institutions. Note also that the non-Catholic faculty in CMF institutions are significantly less likely (than those in non-CMF schools) to report that they were adequately informed about the importance of the institution's Catholic identity. Such faculty members may well support a hiring for mission policy in order to prevent similar misunderstandings from recurring. These considerations suggest that the chief effect of a hiring for mission policy may be as a symbolic marker. The statement of the institution's Catholic identity and purpose in the hiring process may have more effect on the ones making the statement, establishing symbolic boundaries for current faculty members, than the potential hires who hear it.

CONCLUSION

This study examined a random sample of faculty members ($n = 1,290$) and institutional profiles ($n = 100$) of American Catholic colleges and universities to determine if, as asserted by the apostolic constitution *Ex Corde Ecclesiae*, a Catholic-majority faculty (CMF) did in fact promote the Catholic identity of the institution. I found strong empirical evidence to support this assertion and, by extension, the general thesis that a critical mass of faculty serves to maintain or improve a university's religious identity.

An examination of the three corollary hypotheses implied by the critical mass thesis found that all were strongly supported by the evidence. Hypothesis A proposed that Catholic faculty are more supportive of Catholic identity than non-Catholic faculty. A comparison of faculty opinion items demonstrated this to be the case; factor analysis also derived a distinct factor of Aspiration for Catholic identity upon which Catholic faculty differed greatly from non-Catholic faculty. Hypothesis B asserted that institutions having a CMF are more supportive of Catholic identity (than those without a CMF). The very close fit to the data of a structural equation model embodying this hypothesis provided evidence that it was true, finding four variables that accounted

for the difference: faculty tenure, Aspiration, a hiring for mission policy, and a larger proportion of Catholics in the student body. Finally, Hypothesis C proposed that the institutional differences could not be due simply to the aggregation of the faculty differences; a critical mass induces emergent properties in the faculty of Catholic institutions. A comparison of Catholic faculty in CMF and non-CMF institutions readily demonstrated that such differences exist. In addition, I found that the preferential hiring of Catholic faculty, while perhaps serving as a symbolic marker of identity among CMF institutions, has no effect on producing a CMF.

In general terms, I found that faculty tenure and aspiration regarding religious identity were the most important correlates of improved religious identity. On the one hand (considering faculty opinion), these findings underscore the importance of faculty as carriers of the religious identity of religiously affiliated universities. The religious character of a university is not something that can be relegated to a particular component of the university or its curriculum. Nor can administrators successfully promote such identity in the absence of faculty who are also devotees of the faith; who research, teach, and live “from the heart of the Church.” On the other hand (considering tenure), these findings suggest that the accumulation of such devoted faculty members in a university is as much a result of the assertion of a university’s religious identity as it is a cause. On both hands, the recovery or improvement of a university’s religious identity does not happen quickly. Like most cultural changes or shifts of intellectual paradigms, it is a process, best measured in decades, that rewards the patient and the persistent.

This analysis has touched on many worthy questions of interest to Catholic universities and faculty—for example, the effects of university type (undergraduate, doctoral, research, etc.), faculty’s substantive field (humanities, science, professional school, etc.), or age cohort relative to Vatican II—that could not be pursued due to limitations of space or of the data. Furthermore, although the critical mass thesis applies to religious universities in general, the data for this study are limited to Catholic universities and identify only Catholic faculty. Further research would be helpful to definitively confirm, refute, or specify the applicability of these findings to non-Catholic religious universities. In addition, a study to determine the effect of religious identity on tenure at nonreligious universities would provide additional light on this powerful factor in shaping the identity of universities.

ACKNOWLEDGMENTS

Thanks are due to Charles Zech for making available the data for this study, and to Dean Hoge, Che Fu Lee, James Youniss, and Charles Zech for helpful critique and conversation.

NOTES

1. Although most who discuss it have not been specific, the exact proportion that constitutes a critical mass of faculty has been variously estimated at about a third to about two-thirds. McBrien (1994), for example, speculates that a critical mass can be composed of less than a majority, while Benne (2001) argues that it should comprise two-thirds of the faculty, although he adds (inconsistently, in my view) that not all of those who are intensely committed to the truth of a school’s faith tradition need be communicants of that tradition.
2. First, distributions of missing values were tabulated and determined to be random with regard to the intercorrelations of the aggregated variables. Second, missing values were estimated using the mean values of cases that conformed to the same pattern on the remaining variables in both scales. Third, the distribution of each variable with and without imputation was compared. In all cases the means were identical to within two decimal points.
3. In all the factor analyses of this article, rotated solutions, both orthogonal (varimax) and oblique (oblimin), had the same pattern of loadings as a principal components solution.
4. Dwyer and Zech (1998) also show higher approval at 0.05 among Catholic faculty for “Peace and Justice” courses. However the mean difference from non-Catholic faculty is very small (0.25 on the six-point scale) and the difference is not significant at the 0.01 level. Because the faculty responses on these seven curriculum items are so homogeneous—for all of them, mean square error is less than 0.09—there is an increased risk of type II error in significance tests, that is, attributing differences among them when in fact there are none. Although Dwyer and Zech (1998) show differences between Catholic and non-Catholic faculty on six of the seven items, at the more rigorous 0.01 level of significance Catholics and non-Catholics differ on only the three items that I report here.

5. There may, of course, be differences by age among Catholic faculty on what is meant by "Catholic mission" or "Catholic values." The cohort differences related to Vatican II found among Catholics in other research (e.g., Davidson 1997) do not appear in these data. Of the 14 opinion items related to Catholic identity, faculty in the "Pre-Vatican II" cohort differ from the "Vatican II" cohort on only six items; the "Vatican II" cohort differs from the "Post-Vatican II" cohort on only two items. In all cases, the magnitude of the difference is so small that the overall trend is not significant. This survey, however, was not designed to capture such differences: there are no measures of religiosity or religious belief, only 5 percent of the faculty is young enough to be in the Post-Vatican II cohort; and the large effects of mortality ensure that senior faculty do not comprise a random sample of Catholics. Although these data demonstrate that selection effects increase institutional commitment among more senior faculty, they tell us nothing about the content of Catholic identity for faculty of different ages or cohorts.
6. The high rate of institutional nonresponse on this question may be why Dwyer and Zech do not report and discuss Catholic faculty proportions. I had available for analysis only the baseline data for responding institutions corresponding to the completed faculty sample. This comprised 72 cases, which is about half the reported total of baseline questionnaires returned (153) and 72 percent of institutions with responding faculty. The baseline nonresponse reported, then, is the nonresponse in this subset of cases.
7. The mean deviation was 12.7 percent. With respect to the institutional baseline reports, the adjusted faculty measure of the proportion of Catholics retains a correlation of 0.58, is unbiased, and has an interreliability (standardized Cronbach's alpha) of 0.68.
8. With all the cases included, the differences were in every instance similar to those presented in Table 4 but of a smaller magnitude, and only four of the eight differences (Items B, D, E, and H) attained statistical significance at conventional levels.
9. Tenure is measured in five-year increments on the survey; I have multiplied the means by five to convert them to the reported single-year estimates.

REFERENCES

- Benne, R. 2001. *Quality with soul: How six premier colleges and universities keep faith with their religious traditions*. Grand Rapids, MI: Eerdmans.
- Buckley, M. J. 1993. The Catholic university and the promise inherent in its identity. In *Catholic universities in church and society: A dialogue on Ex Corde Ecclesiae*, edited by J. P. Langan, pp. 74–89. Washington, DC: Georgetown University Press.
- Byrne, B. M. 1989. *A primer of LISREL: Basic applications and programming for confirmatory factor analytic models*. New York: Springer-Verlag.
- Curran, C. E. 1997. The Catholic identity of Catholic institutions. *Theological Studies* 58:90–108.
- Davidson, J. D., R. A. Lamanna, J. Stenftenagel, K. M. Weigert, W. J. Whalen, and P. Wittberg. 1997. *The search for common ground: What unites and divides American Catholics*. Huntington IN: Our Sunday Visitor.
- Dwyer, J. A. and C. E. Zech. 1996. ACCU survey of Catholic colleges and universities: Report on faculty development and curriculum. *Current Issues in Catholic Higher Education* 16(2):5–24.
- . 1998. American Catholic higher education: An ACCU study on mission and identity, faculty development, and curricular revision. *Current Issues in Catholic Higher Education* 18(2):3–32.
- Gallin, A., editor. 1992. *American Catholic higher education: Essential documents 1967–1990*. Notre Dame, IN: University of Notre Dame Press.
- Haughey, J., S.J. 1996. Catholic higher education: A strategy for its identity. *Current Issues in Catholic Higher Education* 16(2):25–32.
- Hehir, B. J. 1993. Comment. In *Catholic universities in church and society: A dialogue on Ex Corde Ecclesiae*, edited by J. P. Langan, pp. 28–31. Washington, DC: Georgetown University Press.
- Hellwig, M. 2001. The survival of Catholic higher education. *America* July 16:23–24.
- Hesburgh T. M., editor. 1994. *The challenge and promise of a Catholic university*. Notre Dame IN: University of Notre Dame.
- Komonchak, J. A. 1993. The Catholic university in the church. In *Catholic universities in church and society: A dialogue on Ex Corde Ecclesiae*, edited by J. P. Langan, pp. 35–55. Washington, DC: Georgetown University Press.
- Langan, J. P., editor. 1993. *Catholic universities in church and society: A dialogue on Ex Corde Ecclesiae*. Washington, DC: Georgetown University Press.
- Marsh, H. W. and D. Hocevar. 1985. Application of confirmatory factor analysis to the study of self-concept: First and higher order factor models and their invariance across groups. *Psychological Bulletin* 97:562–82.
- McBrien, R. 1994. What is a Catholic university? In *The challenge and promise of a Catholic university*, edited by T. M. Hesburgh, pp. 153–63. Notre Dame, IN: University of Notre Dame.
- O'Brien, D. J. 1994. *From the heart of the American Church: Catholic higher education in American culture*. Maryknoll, NY: Orbis Books.
- Tekippe, T. J. 1997. The future of the Catholic university. *Homiletic and Pastoral Review* 47(6):57–62.
- Zech, C. E. 1999. The faculty and Catholic institutional identity. *America* May 22:11–15.