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Two Kinds of Quakers: A Latent Class Analysis

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A LATENT CLASS ANALYSIS

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ABSTRACT

A latent class analysis was applied to 531 respondents to the Making New Friends survey of Philadelphia Yearly Meeting of the Religious Society of Friends (Quakers). We found two distinct patterns of religious beliefs—those in Group G want a deeper and personal relationship with God, while those in Group S are more interested in social testimonies and generally do not believe in a personal God.

KEYWORDS

INTRODUCTION

Various studies have shown that Quakers are diverse in their religious beliefs (Dandelion 1996; Making New Friends Working Group 2002; Bourke 2003). But can Friends be classified into distinct groups based on their religious beliefs? For example, would the data support the idea that Friends are either 'Christo–centric' or 'Universalist'? Or, is a distinction between 'religious' and 'non–religious' more accurate? In his study of decision making among Friends, Sheeran (1983) suggested the core division was between those who either had or have not had a personal experience of the presence of God. Ives (1980) classified Friends into eight types, based on sorting their open ended responses to 'what was it that attracted you most?' when considering joining Friends. However, these approaches to classification are highly subjective.

In biology, classification is often addressed with a statistical method called latent class analysis (also called mixture models). For example, a lake may consist of one, two, or three populations of trout fed by one or more streams. If we assume that the trout from the streams, while similar, will vary systematically, they can be 'unmixed' by a statistical analysis of their features. For example, latent class analysis has been applied in medicine to define subtypes of depression (Sullivan, Kessler, and Kendler

1998), and as well as in other disciplines. Everitt, Laundau, and Leese (2001) provide a description of latent class analysis with examples.

METHOD

We used latent class analysis to describe the results of a survey of 572 Friends from 10 meetings (congregations) in 7 Quarterly Meetings (regions) of Philadelphia Yearly Meeting (PYM) conducted in 2001 and 2002 for the Making New Friends working group. This group was brought together by Thomas H. Jeavons, then General Secretary of PYM, to develop methods for increasing the membership. The first author of this paper was a member of the group and responsible for developing and analyzing a survey of the meetings to develop profiles of current members' and attenders' demographics and beliefs. Three of the 10 meetings were part of a pilot program to pre-test our questionnaire and the remaining seven received a shorter revised questionnaire.

The meetings were not a random sample but did represent a variety of the approximately 100 meetings in PYM. Table 1 lists some characteristics of the 10 participating meetings (each designated by a letter instead of their name), along with the population density in the zip code of the meeting. Those with higher densities are meetings in cities or suburbs close to a city.

Table 1. Characteristics of the Meetings Surveyed

Meeting attended most often	Sample size (n=572)[1]	Quarterly Meeting, State	Population density in zip code (pop./sq. mile)
A	102	Chester, PA	4775
B	94	Chester, PA	1538
C	85	Bucks, PA	791
D	60	Haddonfield, NJ	2107
E	59	Haddonfield, NJ	630
F	44	Philadelphia, PA	12,632
G	40	Western, DE	1248
H	32	Abington, PA	1856
I	23	Burlington, NJ	3287
J	12	Haddonfield, NJ	1590
Other	21	Some other meeting attended most often	

[1]Sample size before eliminating cases with excess missing data

The first column of Table 2 shows the religious belief and attitude statements we used to classify Friends. Respondents agreed or disagreed with the statements on a 1 to 5 point scale, with 3 being neutral. We combined the two agreement and disagreement levels to produce a three-level variable of agree, neutral, and disagree to remove cells with zero counts. All statements in the questionnaire were discussed and reviewed by the Making New Friends working group as well as a number of experienced Friends in Quaker organizations. However, the views expressed in this paper are entirely those of the authors.

Table 2. Profile of the latent classes on the religious attitudes
and beliefs that were used to generate the classes

	Group G (n=327)[1]	Group S (n=204)	Chi-square (df)
	Agree%/ Disagree%	Agree%/ Disagree%	
I very much want a deeper spiritual relationship with God	80/1	20/27	215.5(2), p<.001
I am attracted to Friends more for social testimonies than for religious beliefs or practices	9/62	53/14	169.8(2), p<.001
For me, Meeting for Worship is a time to listen for God	96/1	51/17	152.0(2), p<.001
I consider myself a Christian	77/8	31/35	123.9(2), p<.001
I have had a transcendent experience where I felt myself in the presence of God	63/15	19/51	121.5(2), p<.001
I am uncomfortable with Friends using Christian language such as 'Jesus Christ' in Meeting for Worship	10/67	39/26	98.2(2), p<.001
It matters less what we believe than what we do in our lives	60/15	85/5	37.9(2), p<.001
For me, Meeting for Worship is a time to hear the views of the community	23/55	35/33	21.9(2), p<.001
There is that of God in everyone	93/2	85/5	14.4(2), p<.001
No one can tell me what the truth is; only I can decide what truth is for me	56/21	64/12	6.9(2), p=.03
For me, Meeting for Worship is a time for peace and quiet rest	64/15	72/7	5.9(2), p=.05
Although everyone has the Light within, different people have it in different amounts	43/35	49/27	4.8(2), p=.09
I feel I am a 'refugee' from another religious tradition	17/61	21/55	2.0(2), p=.37
	%	%	
Belief in a Traditional God to whom one can pray in expectation of receiving an answer	63.5	8.7	180.4(2), p<.001
Disagree	18.0	62.5	
No definite opinion	18.5	28.8	
Pray weekly or more often	85.6	21.2	229.0(1), p<.001

[1] Group sample sizes in these tables are based on classification of individuals to their most likely latent class.

The statements were designed to measure a number of beliefs and attitudes. For example, the statement on having a transcendent experience was based on Sheeran's (1983) suggestion that this was a key differentiator between Friends. Statements on

the Meeting for Worship, a unique form of weekly congregational worship based on silence, were designed to measure beliefs about what is happening in Meeting for Worship. 'There is that of God in everyone' is a commonly quoted phrase from George Fox, the founder of Quakerism, while 'Although everyone has the Light within, different people have it in different amounts' is a paraphrase of a lesser-known idea from Fox.

The statement on belief in a traditional God was based on one used by Bryn Mawr College psychologist James H. Leuba in 1914 and 1933 (Starke and Finke 2000) and more recently by Larson and Witham (1999) to measure the belief of scientists in a traditional God, that is, a God to whom one can pray in expectation of receiving an answer. Overall, 42 per cent of our respondents believe in a traditional God, comparable to about 40 per cent of professional scientists, but much less than the over 80 per cent for the US population (Larson and Witham 1999).

The questions on political attitudes and the frequency of prayer were taken from the 1998 General Social Survey, which includes a module on religion, and has been conducted annually since 1972 (National Opinion Research Center 1998). Using these questions allowed us to compare our sample to the United States averages.

Latent class analysis assumes there are multiple populations and then computes parameters for the most likely mixture of these populations. Latent class analysis tries different numbers of populations and uses goodness-of-fit statistics to determine which model (1-, 2-, or higher class) best fits the observed data. Once it has computed the most likely mixture, it assigns each individual a probability of arising from each class. We conducted the latent class analysis with the MPlus statistical package (Muthen and Muthen 2006), and other analyses with SAS (SAS Institute 2006). The Mplus package provides estimates despite missing data, but we eliminated respondents with 4 or more missing items, thus reducing the sample size to 531. We refer to the classes in this paper as 'groups', departing from strict statistical terminology for ease of exposition.

RESULTS

Number of Groups (Classes)
How many different groups (or classes or clusters) are there among these Friends? The 2-class solution fit significantly better than the 1-class solution using the Bayesian Information Coefficient (BIC), with a Lo-Mendell-Rubin adjusted Likelihood Ratio Test (LRT) of 823.7 (p<.0001). The 2-class solution showed a slightly better fit on the BIC than the 3-class, with a Lo-Mendell-Rubin adjusted LRT of 166.8, (p=.13). This result showed that the 3-class solution did not add significant information to the 2-class solution. The 4-, 5-, and higher class solutions showed worse fit and the Lo-Mendell-Rubin adjusted LRT was then not statistically significant. Thus, the 2-class solution is statistically the most appropriate for these data.

Profile on Variables Used for Classification
Table 2 shows the profile of the two groups of Friends, with the percentage of those agreeing and disagreeing with each belief or attitude statement. The two groups are

shown in the order in which they were extracted by the program. Table 2 also shows the value of the chi-square statistic and the significance level for the chi-square. We have ordered the belief statements by their value on the chi-square, as larger values of chi-square represent greater differences between the two groups. For convenience, we have named the two groups G and S, as opposed to using the statistical terminology, Class 1 and Class 2.

Group G is larger, with 62 per cent of the sample. Compared to Group S, Group G is much more likely to want a deeper spiritual relationship with God (80% vs. 20%), listen for God in Meeting for Worship (96% vs. 51%), consider themselves Christian (77% vs. 31%), and have had a transcendent experience of God (63% vs. 19%). They are much more likely to believe in a personal God (64% vs. 9%) and to pray weekly or more often (86% vs. 21%).

Group S is 38 per cent of the sample. Only 9 per cent in this group believe in a traditional God compared to 64 per cent in Group G. They are much more likely to have been attracted by social testimonies rather than religious beliefs (53% vs. 9%), and are higher on viewing Meeting for Worship as a time to hear the views of the community (35% vs. 23%), on considering belief less important than action (85% vs. 60%), and on disliking Christian language in Meeting for Worship (39% vs. 10%). Group S is also less likely to agree with the statement that 'There is that of God in everyone' (85% vs. 93%), although the absolute levels of agreement in both groups is high.

How well does our classification apply to individuals? Once the MPlus software computes the classes, it then computes how likely each person is to have come from each of the underlying classes. Thus, a person who has a pattern that fits a class extremely well might be assigned a probability of .95 for that class. A person who is a blend of patterns might be assigned a probability of .65 for one class and .35 for the other. The median probability for class assignment was .997, which is very high. Overall, 92.5 per cent of the persons in the classes were assigned with a probability of 70 per cent or more. The remaining 7.5 per cent were assigned to a class with a probably of less than 70 per cent. We can say that about 1 in 13 respondents do not fit neatly into one of these two groups.

Profile on Other Variables

Because the program classifies each respondent into a group, we can also profile the groups on additional items not used to create the groups. Tables 3 and 4 shows these groups profiled on other attitude statements. Three of the meetings were part of the pilot phase, a phase which used a larger list of attitude statements. We have profiled the two groups on these statements also, even though they represent only three meetings.

Table 3 shows other belief statements asked only in the pilot phase. Group G respondents want to know more about the Bible (59% vs. 35%). Group S is more likely to believe that truth is socially constructed (54% vs. 27%), that the US would be better off if religion had less influence (30% vs. 13%), and that one can believe nearly anything and still be a Friend (37% vs. 28%). A surprising number of G Friends (32%) and S Friends (40%) believe that trying to convert others to Quaker beliefs 'does

violence to their personal sovereignty'. However, 60 per cent of G Friends and 54 per cent of S Friends agree that Friends should actively seek new members (Table 4). Both groups have about 4 in 10 who are uncomfortable with 'new age' terminology in Meeting for Worship in a question asked on three of the meetings. Group S dislikes both Christian terminology (39%) and new age terminology (41%), so their dislike of religious terminology is not confined to Christianity.

Table 3. Profile of the religious attitudes used in the pilot study on three Meetings

	Group G (n=136)	Group S (n=93)	Chi-square (df)
	Agree%/ Disagree%	Agree%/ Disagree%	
I would like to know more about the Bible	59/11	35/41	27.5(2), p<.001
Truth is not absolute; it is socially constructed	27/50	54/26	17.6(2), p<.001
Quakerism is not as vital to me today as it once was	19/72	20/50	17.5(2), p<.001
The U.S. would be a better country if religion had less influence	13/58	30/33	16.3(2), p<.001
Because Friends have no creed, one can believe nearly anything and still be a Friend	28/63	37/42	10.3(2), p=.006
Trying to convert others to our Quaker beliefs does violence to their personal sovereignty	32/47	40/27	9.5(2), p=.009
If you turn your back on the light within, you will be condemned by it	13/74	3/72	9.1(2), p=.01
Many in my Meeting know little about traditional Quaker practices	27/39	16/34	6.3(2), p=.04
I am uncomfortable with Friends using terminology from 'new age' spirituality (like reincarnation, Goddess, psychic energy) in Meeting	38/32	41/23	2.3(2), p=.32
In the past, I have explored many different religious traditions	42/45	34/51	1.4(2), p=.49
Personal leadings should be subject to approval of the Meeting or a Clearness Committee before they are carried out	37/32	29/35	1.3(2), p=.53
For me, Meeting for Worship is a time to share personal news and feelings	18/63	22/61	0.8(2), p=.67
For me, Meeting for Worship is a safe place to recover from life's stresses	71/7	67/9	0.46(2), p=.79

Table 4 shows additional attitudes that are not closely related to religious beliefs. The only large difference is that Group S is less positive about careers in the for-profit sector of the economy.

Table 5 profiles the groups on membership, demographic, and other variables. Compared to Group G, Group S appears to be less involved in Meeting. They are less likely to attend weekly (28% vs. 53%), and a higher percentage are attenders

(29% vs. 18%) rather than members. Group G is more likely to ask (39% vs. 27%) or bring (26% vs. 17%) a person to Meeting. Although respondents are predominately liberal in political attitudes, Group S is twice as likely to be 'extremely liberal' as Group G (23% vs. 12%) and a third as likely to be conservative (5% vs. 14%). Group S is also more likely to be male (50% vs. 34%). In Group G, the female to male ratio is about 2 to 1, while it is 1 to 1 in Group S. Group S is slightly older (49% over age 60 vs. 38% over age 60).

Table 4. Profile of the other attitudes used in the full study and the pilot study

Full Study (10 meetings)	Group G (n=327)	Group S (n=204)	Chi-square (df)
	Agree%/ Disagree%	Agree%/ Disagree%	
I still sometimes feel like an outsider in my Meeting	23/57	23/51	2.8(1), p=.25
Quakerism should be encouraging diversity much more strongly	43/18	50/10	6.2(1), p=.05
It is very important that my Meeting supports Friends Schools	67/10	66/11	0.3(1), p=.86
Pilot Study (3 meetings)	**(n=136)**	**(n=93)**	
I believe Friends should actively seek new members	60/6	54/13	3.4(2), p=.18
We should use a Bible rewritten to be inclusive and non sexist	21/42	27/34	1.8(1), p=.40
Pursuing a for-profit career is contrary to many Friends testimonies	10/74	15/53	13.1(1), p=.001
I make a strong effort to serve and eat organic food whenever possible	28/43	23/55	3.7(1), p=.15
The Society of Friends should sanction same-sex marriages	59/25	66/14	4.2(1), p=.12

Table 5. Profile of the respondents on other variables
after they were assigned to a specific class

	Group G (n=327)	Group S (n=204)	Chi-square (df)
	%	%	
Attender (not an official member of a Meeting)	18.1	28.6	8.0(1), p=.005
Birthright member (i.e., member since birth)	23.4	23.6	.001(1), p=.97
Male	34.2	50.3	13.0(1), p<.001
Gay/lesbian/bisexual/transgender	5.7	6.1	0.03(1), p=.86
Attended Friends Meeting 0–10 years	26.7	26.6	.50(1). p=.92
11–25 years	24.7	22.9	
26–50 years	26.6	29.3	
51 or more years	22.1	21.3	

Attend less than once a year	5.0	9.9	35.1(4), p<.001
Several times a year	13.1	18.7	
About once a month	7.8	16.3	
2-3 times a month	20.9	27.9	
Weekly	53.3	28.1	
Asked anyone to attend Meeting in past six months	39.4	27.4	7.85(1), p=.005
Taken someone to Meeting in past six months	25.5	16.6	5.6(1), p=.02
Talked about your Quaker beliefs with people outside of Meeting, such as at work	80.3	72.8	3.95(1), p=.05
Under age 40	10.4	10.8	9.0(3), p=.03
Age 40-59	51.8	40.2	
Age 60-79	29.1	34.3	
Age 80 or older	8.6	14.7	
Not college graduate	8.9	9.3	0.7(2), p=.70
College/ some graduate courses	35.9	39.2	
2 or 4 year graduate degree	55.2	51.5	
Household income under $60,000	32.3	28.8	2.9(2), p=.23
$60,000 to $99,999	34.0	29.8	
$100,000 or more	33.7	41.4	
Political Attitudes			
Extremely liberal	12.2	22.8	21.8(4), p<.001
Liberal	46.4	50.5	
Leaning Liberal	13.2	9.9	
Moderate	13.8	12.4	
Leaning cons., cons., or extremely cons.	14.4	4.6	

Table 6 shows the distribution of the groups by meeting, with the meetings sorted by number of respondents. Both groups appear in all meetings, but the percentage in each meeting varies. The two meetings with the highest percentage of Group S respondents are commonly known to be more socially active than the others.

Table 6. Composition of Meetings by Group

Meeting attended most often	Group G %	Group S %
H	81	19
G	80	20
J	73	27
E	65	35
B	64	36
C	60	40
D	58	42
F	56	44
Other	56	44
A	53	47
I	52	48

DISCUSSION

The latent class analysis found that PYM Quakers can be classified into two groups in a 60–40 split based on their religious beliefs used in this survey. The groups are distinct, that is, they are not describing the two extremes of an otherwise homogenous single group. We had not expected to find just two groups. We were expecting to find three or more groups. We have named the two groups 'G' and 'S' because one is oriented toward a relationship with God, and the other toward relationships with other people in social action. We did not find evidence for two groups that might have been dubbed 'C' for Christo-centric and 'U' for Universalist, a distinction that has been widely viewed as describing distinct groups among Friends.

Statisticians sometimes joke that there are two approaches to classification—the 'lumpers' and the 'splitters'. The splitters find reasons for breaking clusters into more groups, while the lumpers look for larger more inclusive groups. For example, one might define groups of Quakers depending on their religion of origin, thus classifying Friends into 'Jewish Quakers', 'Methodist Quakers', etc. The latent class approach is more of a 'lumper' approach, treating the classes as a mixture of underlying populations, each of which has some variation around a mean. Thus, our G group represents a group of persons who seek a relationship with God, although there is some variation in how strongly they seek it. The S group represents a different group whose primary interest is in social action, not a relationship with God. While one could split these groups into additional groups using various and often ad hoc criteria, the underlying latent class theory suggests that the theology of PYM Friends falls into these two broad classes.

What is holding PYM Quakers together, especially during Meeting for Worship, given the differences in religious beliefs? We have one group who are seekers looking for a relationship with God and another which does not believe in a personal God, prays little, and is often upset with religious language, whether Christian or 'new age'. Perhaps the differences cause tensions difficult for some Friends to bear. Different rates of attendance between the two groups at Meeting for Worship suggest that worship may be less helpful or perhaps less meaningful for 'S' Friends. Perhaps the possible tensions are handled by some Friends going to like-minded meetings, so that 'G' Friends are more likely to attend 'G' meetings and similarly for 'S' Friends.

It is also possible that the differences do not cause much tension for many Friends. It may be that 'G' Friends value the contributions of 'S' Friends, looking to them for leadership in finding and using opportunities for service. Similarly 'S' Friends may value the spiritual contributions of 'G' Friends. That neither group feels particularly excluded is shown by the 23 per cent identical agreement of the two groups to the questionnaire statement, 'I still sometimes feel like an outsider in my Meeting' (see Table 4).

Another possibility is that while areas of difference do cause tension, other areas of agreement hold the two groups of Friends together. For example, both groups perceive Meeting for Worship as a safe place, a time for peace and quiet rest, and not the time to share personal news and feelings. Both groups have similar (and divided)

feelings that personal leadings should be subject to the approval of clearness commit-tees. Both groups disagree that the Light Within condemns those who turn their back on it. Both groups are similar in educational level and political liberalism. And finally, both groups are reluctant to convert others to Quakerism.

Our study has two key limitations. First, it was designed for another purpose—obtaining information about increasing membership—so the number of attitude items was limited. Now that we have the latent classes, we can easily think of additional questions we wished we had asked, which might better differentiate the groups. For example, we would include attitude items that elicit information about involvement in social and political activities as well as more detail on attitudes toward universalism and specific social and religious testimonies.

The second limitation is the restricted sample. Worldwide, the majority of Friends are evangelical Christians living in Africa or South America who worship within a pastoral structure (Cary 1995). Our results are restricted to one liberal yearly meeting in the 'unprogrammed' tradition, and to 10 meetings out of the 100 in that Yearly Meeting. We do not know how different the results be would for other liberal unprogrammed Friends. The addition of other kinds of Friends such as Evangelical or Conservative into our sample would almost certainly reveal additional classes.

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