International Journal of Sociology and Anthropology Vol. 4(3), pp. 100-115, March 2012
Available online at http://www.academicjournals.org/IJSA
DOI: 10.5897/IJSA11.128
ISSN 2006- 988x ©2012 Academic Journals

Full Length Research Paper

Professional homogeneity: Global versus local effects

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Accepted 8 February, 2012

Theoretical approaches in studies on professionals are implicitly based on an assumption of homogeneity of attitudes among professionals. However, this assumption has never been validated. This paper examines whether professionals worldwide have relatively homogenous attitudes towards work as compared to non-professionals, and compares two competing theoretical arguments regarding the role of the state in shaping professionals' work-related attitudes. These were tested using a multi-national representative sample of 12,015 respondents from twenty-one countries. Multilevel models showed that professionals do display more homogenous attitudes than non-professionals and that the effect of professional group membership on attitudes does not vary across countries.

Key words: Work attitudes, homogeneity, institutional theory, globalization, multilevel model.

INTRODUCTION

Underlying the presumed global isomorphism of professionals is the notion that professionals can be defined as a single group characterized by relatively homogenous attitudes (DiMaggio and Powell, 1983; Meyer, 2000). The two traditional theoretical approaches typically applied in studies on professionals – the structural-functionalist approach (which includes normative and dominance approaches) and the state-dominance approach – implicitly rely on this assumption (for example, Abbott, 1988; Freidson, 2001; Guler et al., 2002; Larson, 1977; Meyer et al., 1997; Montgomery and Oliver, 2003). DiMaggio and Powell (1983: 152) for example, argued that "professional and trace associations create a pool of almost interchangeable individuals who occupy similar positions across a range of organizations and *possess a similarity of orientation and disposition.*"

The assumption of homogeneity of attitudes among professionals thus appears to be the foundation of these theoretical approaches. Surprisingly, however, to the best of our knowledge this assumption has not been tested systematically across countries. Previous studies generally focused on either a single profession or a single country (for example, Fourcade, 2006: 156) and when more than one country or occupation is examined, questions about between-group differences in attitudes or other outcome variables have typically been configured to focus on differences in the mean, rather than heterogeneity or homogeneity (that is to say, the size of the variance). In addition, most studies dealing with professionals employ qualitative methods. Quantitative analyses that can provide external validation of theoretical claims are rare. Hence, there is need for a study designed to test the homogeneity assumption empirically. Such a test may provide an important contribution to the field of professional studies, as it may offer concrete empirical evidence for the basic foundations of the theories of professions, as well as serving as a basis for the development of future theories.

To fill this gap, the present study explores the extent to which professional homogeneity is manifested globally, beyond the conditioning institutional effects of specific countries. The current study provides a unique quantitative perspective on this question, using a multi-national representative-household survey of twenty-one countries. Rather than adopting the traditional approach of comparing mean values for responses across groups, using regression for example, we shift the focus to the diversity or similarity of response values within a group,

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thus, making the degree of variability itself the target of study. This transition requires a conceptual switch, as well as the use of methods suitable for comparing variances rather than means. We also shifted the focus of analysis to an integration of the micro level (professional attitudes) with the macro level (national political cultures and policies), with the aim of examining the degree of homogeneity or heterogeneity in attitudes among professionals across nations.

Specifically, the first objective of the current paper is to empirically explore whether professionals display greater *homogeneity* in their attitudes towards work than non-professionals. The second objective is to examine two competing arguments regarding the effect of the state on the degree of global homogeneity among professionals. Here, we seek to compare the homogenizing pressures of globalization with the differentiating impact of the state to identify which of these influences play a more dominant role in shaping professionals' work attitudes.

THEORETICAL BACKGROUND: THEORIES OF PROFESSIONS

It is difficult to find a common definition for professions, and Freidson (1994) even suggests that the professions should be studied without a fixed definition. The literature considered professions "inherently distinct from other occupations" (Klegon, 1978: 268) and distinguishable as "exclusive occupational groups applying somewhat abstract knowledge to particular cases" (Abbott, 1988: 8). In general, professions are considered to be occupations that require a formal academic degree and a lengthy training process which leads to labor-market closure; they traditionally include medicine, law, engineering, architecture, and other fields that meet these academic and training criteria (Freidson, 1994; Merton, 1957).

Traditionally, there have been two main trends in the study of the professions: the structural-functionalist approach (which includes normative and dominance approaches), and the state-dominance approach. These are described briefly. We are aware that the most recent literature on the professions has shifted to center on professionalism and professional organizations, such as law firms and the bureaucratic environment in which they operate (for example, Abel, 2003; Flood, 2007; Hanlon, 2004). However, we believe that this literature is of less relevance for the questions that will be seen in this study.

Normative and dominance approaches

Early structural-functionalist theorists (Goode, 1957) viewed professions as communities sharing joint identities and attitudes, and having similar role definitions and high levels of internal values. This way of thinking gave rise to the "normative approach" to the study of professions. The normative approach attributes ideal traits to professionals, such as a clear and exclusive abstract knowledge base with patent value to society, a clear code of ethics, and service practices associated with altruistic behavior (Hodson and Sullivan, 1994; Macdonald, 1995). Socialization into normative traits is believed to occur through academic training for professional fields in settings such as universities (Clikeman and Henning, 2000). This socialization is thought to produce greater homogeneity in professionals' attitudes, and make them distinctly different from the attitudes of non-professionals.

The "dominance approach" (Freidson, 1970) emphasizes the ideological nature of professional claims, and explores the ways in which professionals establish authority over clients and associated occupations. Under this approach, homogeneity among professionals is expected to follow from Larson's (1977) view of professionalization as a "collective mobility project" in which occupations struggle to improve their social standing and economic position in society. Professionals have the ability to select candidates for the profession and establish transformative practices that allow for strong socialization of new entrants. Thus, professional attitudes, considered as shared traditional beliefs, are embedded in professions to a degree that generates a high level of conformity (Greenwood et al., 2002). In addition, a professional code of ethics can reinforce professional solidarity (Abbott, 1983) and, therefore, shared attitudes toward work. Both the normative and dominance approaches argued that professionals make up a well-defined social entity distinct from non-professionals (Abbott, 1988; Freidson, 1994). That is, members of the various professions comprise a distinct group, with distinct features common to all professions. Accordingly, we hypothesized that strong socialization pressures, exerted primarily through education and training requirements, will lead *professionals to display greater homogeneity in their attitudes toward work than non-professionals*.

Professionals' attitudes toward work

The professions literature provides some indications that professionals' attitudes toward work should be distinct from those of non-professionals. Among a wide range of work attitudes, four – commitment, internal motivation, altruism, and desire for autonomy – have received the most attention in the literature.

According to Freidson (1994) and Larson (1977) the social organization of the professions, as well as professional education and mentoring, enhances different types of commitment. First, any given profession forms an independent community that privileges its members in the labor market and incorporates independent training mechanisms. Membership in that community may thus

encourage commitment to colleagues and to the profession itself, while lengthy training and accreditation processes encourage professionals to commit to prolonged careers. Secondly, professional careers encourage commitment to the job and to the quality of work. To the extent that the profession's area of jurisdiction is stable, professionals have the training and skill to perform unique tasks which others are barred from, making them more likely to committed to the work they do.

Internal motivation is high among professionals, in part because people are drawn to professional work – at least partly – by its internal incentives, including the challenges of the job and the atmosphere of intellectual innovation that accompanies professional work (Barbuto and Scholl, 1998; Freidson, 1994). Moreover, professional ideologies encourage members of the profession to work for the satisfaction and pleasure of fulfilling goals rather than for a high income and a good life (Freidson, 2001). Therefore, professionals act more from internal than external motivations.

Both the normative and dominance approaches have explored altruism as a facet of professions. Indeed, since Spencer's classic study (1896), professions have been defined as occupations that execute tasks of high social value. Various scholars (for example, Cooper et al., 1996; Freidson, 1994) have held on to the fact that professionals self-sacrifice is in order to help their clients on the basis that professionals feel a responsibility to use their knowledge to preserve public welfare. Altruism and the desire to help society at large are seen by professionals as simply civilized behavior (Cooper et al., 1996), or as an ideological dimension of the professions (Freidson, 1994). Finally, the literature on the professions highlights the importance of autonomy to professions and professionals (Oliver, 1997; Scott, 1965). The dominance approach, in particular, argues that professions need autonomy in order to establish a monopoly over recruiting, education, and credentialing, as well as, to ensure that members of the profession will develop expertise and an authoritative knowledge base (Freidson, 1994; Macdonald and Ritzer, 1988).

The state approach

The comparative approach that emerged in the 1980's (for example, Freidson, 1986) called for between-state comparisons of professions based on state characteristics rather than comparisons between professions. The state approach has led to two competing arguments regarding the role of the state which merit evaluation. Based on these arguments, we can generate two competing hypotheses.

The first argument suggests that to a significant extent, the state is indeed a key player in shaping the context within which professions emerge and operate. States provide the institutional environment of professions, establish or limit their jurisdictions, and grant authority for education and credentialing (Freidson, 1994, 2001). Under this view, professions in modern societies can be considered a creation of the state (Jones, 1991: ix) or, alternatively, as part of the state, a form of governance at arm's length (Halliday, 1987). In either case, the state acts as a strong legitimizing force for professions. State authorization enhances the profession's power base and strengthens its position vis-à-vis competing professions or occupations.

In addition to the question of the state's role vis-à-vis professions per se, comparative studies show significant variation in the extent to which different nations centralize their economic and social institutions. A high level of state centralization is negatively correlated with professional power, since professions in such circumstances have little authority to self-organize. Professions in decentralized states enjoy considerable autonomy and self-governance, which grants them a stronger position in civil society (Freidson, 1994; Heidenheimer, 1989; Macdonald, 1995). Therefore, in highly centralized countries, professions may have less power to influence their members; their jurisdictions are limited having less autonomy to decide university curricula, and so forth and as such professionals will be more influenced by other factors, particularly at the country level. Thus, on this dual basis – the state as a key player in shaping professions, and the effect of state centralization – we hypothesized that the ability of the state to shape professions will *result in high degree of global heterogeneity in the attitudes of professionals toward work***.**

The second argument shapes the contemporary debate on profession-state relations in terms of processes of globalization (Suddaby et al., 2007: 334). Scholarly sociological work on globalization argues that global processes are unitary and continual, and thus have an isomorphic impact above and beyond the power of the state (Drori et al., 2006).This claim follows the argument of Meyer et al. (1997: 165) that there is a high degree of homogeneity among professionals across countries. Although, the state can have an internal homogenizing effect alongside its external differentiating power, professions are important participants in world society because they exercise control through cognitive and normative processes (Scott, 1995: 95).

DiMaggio and Powell (1983) identified three mechanisms by which organizations, including professional organizations, can become more similar to each other over time: coercive, mimetic, and normative isomorphism. Coercive isomorphism, or coercive convergence (Mills et al., 2008) is the process by which organizations respond to pressures and expectations from external sources, including international professional organizations, credentialing bodies, and developmental systems. Mimetic isomorphism occurs when one

organization imitates or adopts the practices of another, either for competitive reasons or to foster working together when the organizations are part of a network. Thus, joint international activities by national professional groups, such as professional conferences and working groups, may contribute to the diffusion of professional practices across nations (Guler et al., 2002). The third mechanism, normative isomorphism, results from the normal processes of exchange and communication between organizations. Professions and their networks are considered the engine of normative isomorphism, allowing for the rapid transmission and diffusion of knowledge and professional practices across organizations and countries. All three processes namely – coercive, mimetic, and normative isomorphism – are enhanced by and, in turn, amplify broader processes of convergence toward a global culture. Hence, the globalization approach leads to a competing hypothesis, whereby the homogenizing force of globalization overwhelms the differentiating impact of the state's ability to shape the professions. We therefore hypothesized that globalization will lead to a *high degree of global homogeneity in the attitudes of professionals toward work*.

RESEARCH DESIGN

Data

Our analysis is based on data from the 1997 International Social Survey Program (ISSP), a voluntary association of research institutions in 47 countries. The ISSP is unique in that it offers nationally representative random samples of the adult population in diverse countries using nearly identical questionnaires (Dreher et al., 2008; Froese and Bader, 2008; Stier et al., 2001). Each year, ISSP members choose a particular research module and prepare a standard questionnaire, which is then translated into the language of each member country (ISSP, 2008; Knudsen and Waerness, 2008).[1] In 1997, the ISSP focused on "work orientations," addressing issues such as attitudes toward work and leisure and the organization of work (Hult and Svallfors, 2002; Sousa-Poza and Sousa-Poza, 2000).

Of the 25 countries included in the survey, four (Bangladesh, Japan, the Netherlands, and Spain) were excluded from our analysis, since respondents from these countries were not asked to provide their occupation. We also excluded respondents from any country who were not employed at the time of the survey. The final sample included 12,015 respondents, of whom 549 were professionals and 11,466 were non-professionals (the criteria for classification as professionals is described below). The basic characteristics of the final sample are presented in Appendix A.

Dependent variables

The literature points toward four dependent variables that represent different attitudes toward work[2]; internal motivation to work, commitment to work (and to the organization), the desire for autonomy at work, and concern with the degree of social responsibility in one's work. We chose 11 items from the ISSP questionnaire that represent different facets of these dependent variables, and that either employ theoretical definitions developed in the literature or follow the wording for items identified as valid in previous studies (for example, Hornung and Rousseau, 2007; Lewis and Frank, 2002; Marchese and Ryan, 2001; Richer et al., 2002[3]). Exploratory factor analysis provided strong support for the division of the attitudes into four separate and distinct factors (Table 1). Based on the loading factors, we computed a weighted average for each index (Kim and Mueller, 1978). The means and standard deviations for the indices for professionals and non-professionals are shown in Table 2.[4]

Independent variables at the individual level

Professional group membership is a dichotomous variable that describes whether or not an individual belongs to one of the following professional groups[5]; architects (including town and traffic planners); engineers (civil, electrical, communications, mechanical, chemical, and mining); health professionals (medical doctors, dentists, veterinarians, and pharmacists, but not nurses); accountants; legal professionals (lawyers and judges); psychologists; and social workers. Because there is no consensus definition of "the professions" among researchers (Freidson, 1994), the term was operationalized in the current study based on the following considerations. First, we selected groups, such as doctors, lawyers, accountants, engineers, and architects, that have traditionally been categorized as professionals (Freidson, 1994; Merton, 1957). Secondly, because we aimed to examine how socialization, selection, and training determine the attitudes of professionals, we included as professions only occupations that require a formal academic degree and a lengthy training process in order to practice, leading to labor-market closure (Freidson, 1994). Under this logic, librarians and teachers were not classified as professionals. Thirdly, we excluded certain professions for practical reasons, such as a shortage of data or small numbers of respondents. Once we had selected the professions that would be included in our operational definition, we needed to determine whether to categorize professionals into a number of distinct groups, or to use a single dichotomous specification. Our aim was to compare the degree of heterogeneity among professionals as a whole, and between professionals and non-professionals, meaning that we were interested in viewing membership in a profession as a dichotomous variable. To test the validity of this approach we performed a preliminary analysis in which we compared the fit of a model with five distinct professional groups (Engineers and Architects, Doctors, Accountants, Lawyers and Judges,

[1]The data for the ISSP are collected in each country by independent institutions that apply different multi-stage random procedures, using face-to-face, self-completion, or telephone fieldwork methods (further details can be found at: http://www.za.uni-koeln.de/data/en/issp/codebooks/ZA3090_cdb.pdf).

[2]Notwithstanding the many benefits of our rich cross-national database, it also places serious constraints on our flexibility in choosing variables

[3]Responses to all items were on a five-point Likert scale, where 1= Not important at all/Strongly disagree and 5= Very important/Strongly agree.

[4]Cronbach's alpha for the items constituting the social responsibility index was 0.77; for commitment to work, 0.74; for internal motivation, 0.42; and for desire for autonomy, 0.41. Although the two last alpha values are relatively low, we believe that use of these indices is justified because each was constructed of only two items, making it more difficult to reach high alpha values (Keizer et al., 2010).

[5]While the professions included in our group do not represent all professions, we are constrained by the classification system of the data used in this study. This is the reason that, e.g., social workers are included in this category, but not social scientists. Nurses are considered professionals in most cases; we excluded them because the data did not differentiate between nurses with extensive education and training and those with less.

Table 1. Principal components analysis of the four attitudinal dependent variables with varimax rotation.

Item description	Factor			
	1	2	3	4
A job is not just a way of earning money	0.118	-0.037	0.785	-0.030
I would enjoy having a paying job even if I did not need the money	0.079	0.054	0.751	0.037
I am willing to work harder than I have to in order to help the firm I work for succeed	0.640	0.039	0.096	0.100
I am proud to be working for my firm or organization	0.821	0.157	0.072	0.018
I would turn down another job that offered quite a bit more pay in order to stay with this organization	0.672	0.017	-0.062	-0.004
I wouldn't change my present type of work for something different even if I had a chance	0.658	-0.104	0.174	-0.036
I am proud of the type of work I do	0.739	0.196	0.088	-0.015
It is important for me to have a job that allows one to work independently	0.083	0.161	0.193	0.758
It is important for me to have a job that allows one to decide their time or day of work	-0.038	0.065	-0.170	0.816
It is important for me to have a job that allows one to help other people	0.084	0.882	0.028	0.147
It is important for me to have a job that is useful to society	0.094	0.890	-0.007	0.087

and Psychologists and Social Workers) to a model in which all professionals were combined into a single category. The results showed that the five-categories model did not provide a better fit than the one-category model (results available upon request)[6].

We further collected data for a number of control variables. The following variables were included in our analyses to reduce confounding effects and to highlight the net effect of being a member of a profession on work attitudes. They can be divided into two groups: personal characteristics and work conditions. Personal characteristics are likely to affect worker attitudes because of their relationship with social status or life cycle changes. Previous studies have found that gender, age, education, household size, and marital status were related to our four dependent variables (for example, Bae and Orlinsky, 2004; Hornung and Rousseau, 2007; Manolopoulos, 2008). Work conditions may have an important impact on professional identities and work attitudes. We use a series of variables to measure work conditions – employment status, earnings,[7] "perceived autonomy,"[8] "job security," and "work setting" – which have been shown to be associated with our dependent variables (for example, Benz and Frey, 2008; Felfe et al., 2008; Krous and Nauta, 2005; Prottas, 2008).

The means and standard deviations of the variables for professionals and non-professionals are presented in Table 2. The t-tests in the table indicate significant differences between professionals and non-professionals for the majority of the research variables. These differences suggest empirical validation for our classification of occupations into a professional and non-professional group.

Independent variables at the country level

We compiled a "State Centralization Index" to measure a given state's degree of centralization for the year 1997 (Hicks and Swank, 1992: 671; Lijphart, 1984: 176 to 179). The index was included in the analyses in order to control the differences in centralization levels between countries, on the grounds that, as earlier mentioned, in countries with high levels of state centralization, the professions have less power, and therefore, are less able to influence their members' work-related attitudes, whereas in decentralized countries professions enjoy considerable autonomy and self-governance, and so may have greater of such influence. The index includes three different variables: (1) whether the country is unitary or federal (UF); (2) the ratio of central government to all governmental revenues (RC); (3) and a composite index of state centralization weighted by the size of the state [(UF+RC)/2*government employee share in total employment]. We extracted the data from different sources, primarily the Organization for Economic Cooperation and Development (1999) and the International Labour Organization (1998). We then used principal components factor analysis to estimate the appropriate weights of the different variables in the index. Countries that rank relatively high on the index are said to have higher government centralization, while countries with lower values are less centralized.

In addition, a dichotomous indicator was included for countries that were formerly communist ("Former Communist"). This variable allowed us to determine whether a country's communist past had any enduring influence on individual attitudes, in particular on the relationship between professional group membership and attitudes. This variable also complements the State Centralization Index variable, since it statistically controls the influence of state centralization as manifested before the end of the Soviet era. The former communist countries in our data set include Hungary, the Czech Republic, Slovenia, Poland, Bulgaria, and Russia.

Data analyses

Our hypotheses have more to do with complex levels of variation

[6]We may ask how misclassification might alter our findings under a set of reasonable assumptions. We are concerned with two primary types of errors when assigning individuals to the occupational groups: (1) a professional is mistakenly assigned to the non-professional group (a type 1 error) and (2) a non-professional is wrongly assigned to the professional group (a type 2 error). If we assume that the professional group is more homogenous, then only errors of the second type will be significant for our findings, as such errors might decrease the homogeneity (i.e., increase the variance) of the professional group. The actual implication would appear to be increased confidence in our findings, since the direction of such a bias means that the greater homogeneity among professionals shown by our findings is potentially even larger than we identified.

[7]Earnings were standardized to eliminate variability in the measurement units (Gornick and Jacobs, 1996; Stier et al., 2001).

[8]We distinguish between perceived workplace autonomy and desire for autonomy. The first refers to current working conditions, and the second to the extent to which this quality is perceived as desirable. Their empirical relationship is uncertain.

Table 2. Descriptive statistics and t-tests of the four attitudinal dependent variables and the individual-level independent variables, for professionals and non-professionals.

Variable	Professionals					Non-professionals					t	Sig.
	N	Min	Max	Mean	S. D.	N	Min	Max	Mean	S.D.		
Dependent variable												
Internal motivation to work index	533	1	5	3.815	0.809	11,034	1	5	3.414	0.961	9.465	0.000
Commitment to work index	487	1	5	3.539	0.714	10,113	1	5	3.369	0.771	4.783	0.000
Desire for autonomy index	546	1	5	3.966	0.728	11,185	1	5	3.820	0.773	4.305	0.000
Social responsibility index	537	1	5	3.862	0.784	11,204	1	5	3.914	0.787	-1.495	0.135
Independent variable												
Gender (0= male)	549	0	1	0.321	0.467	11,466	0	1	0.469	0.499	-6.844	0.000
Age	549	22	64	40.505	10.276	11,466	18	65	39.306	10.951	2.513	0.012
Education	549	15	23	17.046	1.761	11,466	1	23	11.839	3.303	36.684	0.000
Single	549	0	1	0.257	0.437	11,466	0	1	0.253	0.435	0.201	0.841
Married	549	0	1	0.661	0.474	11,466	0	1	0.636	0.481	1.197	0.232
Separated	549	0	1	0.082	0.275	11,466	0	1	0.111	0.314	-2.370	0.018
No. of persons in household	549	1	8	2.922	1.352	11,466	1	12	3.141	1.501	-3.697	0.000
Self-employed (0=hired worker)	549	0	1	0.199	0.399	11,466	0	1	0.126	0.331	4.995	0.000
Full-time employee (0=part time)	549	0	1	0.922	0.269	11,466	0	1	0.835	0.371	5.391	0.000
Earnings (in z-scores)	549	-1.52	3.06	1.162	0.993	11,466	-2.00	3.06	0.246	0.973	21.517	0.000
Work setting [†]												
Work at home	549	0	1	0.026	0.158	11,466	0	1	0.033	0.180	-1.151	0.250
Work at home and away from home	549	0	1	0.168	0.374	11,466	0	1	0.208	0.406	-2.439	0.015
Work away from home	549	0	1	0.807	0.395	11,466	0	1	0.759	0.428	2.769	0.006
Job security [‡]												
No written contract	549	0	1	0.138	0.346	11,466	0	1	0.163	0.369	-1.610	0.108
Fixed-term job lasting less / more than 1 yr.	549	0	1	0.133	0.340	11,466	0	1	0.126	0.332	0.454	0.650
No set time limit	549	0	1	0.729	0.445	11,466	0	1	0.711	0.453	0.899	0.368
Perceived autonomy [§]												
Starting and finishing times are decided by my employer (low autonomy)	549	0	1	0.273	0.446	11,466	0	1	0.518	0.500	-12.465	0.000
I can decide the time I start and finish work (moderate autonomy)	549	0	1	0.561	0.497	11,466	0	1	0.365	0.481	9.046	0.000
I am entirely free to decide when I start and finish work (high autonomy)	549	0	1	0.166	0.372	11,466	0	1	0.117	0.322	2.986	0.003

[†] "Which of the following statements best describes where you work?"; [‡] "Which of the following describes your job situation?"; [§] "Which of the following statements best describes how your working hours are decided?"

within and between groups, as well as, with the dependence of this variation, than with predicting the average level of attitudes for different groups. Standard regression methods are well suited to testing for shifts in central values, but they are less than optimal in hierarchical model settings. We turn to multilevel modeling, following Goldstein (1995) and Raudenbusch (2002), to estimate our models and interpret the results.

Multilevel models have three characteristics that are particularly relevant for our analysis (Garner and Raudenbush, 1991). First, they allow for auto correlated errors within clusters, such as states, which is one of the essential assumptions of the standard OLS model, and one whose violation leads to coefficient standard errors that are biased downwards. Secondly, they permit testing for random intercepts and random slopes and assessing the effect of the inclusion of these parameters on the remaining degree of variance in the dependent variable.

Finally, they allow testing for interactions between variables at different levels of the social structure. Our multilevel models have two levels: individuals, *i*, and states, *j*, within which individuals live. Separate variance parameters are estimated for each level: e_{ij} (for individuals) and u_{0j} (for states). The separate terms enable us to determine how the inclusion of explanatory factors affects the variance between individuals within states relative to the variance between states, Equation 1 as highlighted:

$$Y_{ij} = \beta_{0j} + \sum_{h=1}^{p} \beta_h x_{hij} + e_{ij}$$
$$\beta_{0j} = \beta_0 + u_{0j} \quad (1)$$

Testing whether professionals are more homogenous in their attitudes than non-professionals was not straightforward. To do so, we followed Goldstein (1995: 50), who proposed a method for estimating complex variances for subgroups at the micro level (in Goldstein's case, children with manual and non-manual social class backgrounds). First, we created two opposing dummy variables: one for professionals (z_{2ij}) (1 for professionals, 0 for non-professionals) and one for non-professionals (z_{3ij}) (1 for non-professionals, 0 for professionals) (Equation 2). These two dummy variables are included in the model as random parameters (with no fixed component), and the covariance between them is constrained to equal 0. Next, to determine whether the variances are equal we simply use the deviance test, by which this model (Equation 2) is compared to the baseline model in which the two dummy parameters are set to 0 (that is to say, they are not included in the baseline model) and the variance parameter of the individual level is present (Equation 1).

$$Y_{ij} = \beta_{0j} + \sum_{h=1}^{p} \beta_h x_{hij} + \left(e_{2ij} z_{2ij} + e_{3ij} z_{3ij}\right)$$
$$\beta_{0j} = \beta_0 + u_{0j} \quad (2)$$

To further test the global effect of being a professional or non-professional on our work attitude variables, we added a random slope coefficient (u_{1j}) to Equation 2, which resulted in Equation 3. The random slope of the professional coefficient enables us to test for differences across countries in the effect of professional group membership on the dependent variables (work attitudes):

$$Y_{ij} = \beta_{0j} + \beta_{1j} x_{1ij} + \sum_{h=2}^{p} \beta_h x_{hij} + \left(e_{2ij} z_{2ij} + e_{3ij} z_{3ij}\right)$$
$$\beta_{0j} = \beta_0 + u_{0j} \quad (3)$$
$$\beta_{1j} = \beta_1 + u_{1j}$$

We centred the variables in the multilevel regression models using grand-mean centering to facilitate estimation of the model parameters, as well as interpretation of the regression results (Kreft et al., 1995). No evidence of multicollinearity among the independent variables was found.

RESULTS

The effects of professional group membership on the four dependent variables are presented in Table 3. The results showed that the variance in attitudes among professionals was smaller than that among non-professionals. This result is consistent for all four attitudes studied (internal motivation, commitment, desire for autonomy, and social responsibility), indicating a higher degree of homogeneity in attitudes among professionals, $\sigma^2_{e2}<\sigma^2_{e3}$. The differences (deviance tests) are highly significant for internal motivation ($p<0.001$) and commitment ($p = 0.008$), marginally significant for autonomy ($p=0.065$), and not significant for social responsibility ($p = 0.862$).

To test our competing hypotheses regarding the global effect of occupational group (professional versus non-professional) on attitudes, we included a random slope coefficient as shown in Equation 3; the results are displayed in Table 4. In the table, we compared the model with random slopes for the professional coefficient, σ^2_{u1} (model 2), to a restricted model which assumes that the slopes do not vary by country (model 1, which is similar to model 2 in Table 3). The log-likelihood values are shown at the bottom. As the deviance test makes it clear, the random coefficient is marginally significant for internal motivation ($p = 0.057$); further analysis suggested that this marginal significance was primarily due to the effect of the two outlying countries. It is insignificant for commitment ($p = 0.307$), autonomy ($p = 0.445$), and social responsibility ($p = 0.399$). Thus, the evidence suggested few or no differences across countries in the effect of professional group membership on work attitudes. Table 4 further indicated that within-country homogeneity (that is to say, the variances for professionals and non-professionals) is scarcely changed after inclusion of the random slope coefficient for the professional variable, and remains larger than the between-countries variance.

We can summarize our two main findings at this point. First, a greater degree of homogeneity in attitudes exists for professionals than for non-professionals. Secondly, based on our analysis of the random slope coefficients for professional affiliation, there are almost no differences

Table 3. Two models of the influence of professional group membership on four attitudes*.

Parameter	Internal motivation to work		Commitment to work		Desire for autonomy		Social responsibility	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Fixed effect								
Intercept	3.336	3.336	3.337	3.337	3.810	3.810	3.940	3.940
	(0.076)	(0.076)	(0.046)	(0.046)	(0.037)	(0.037)	(0.044)	(0.044)
Professional (0=non-prof.)	0.377	0.377	0.187	0.187	0.134	0.134	-0.019	-0.019
	(0.040)	(0.035)	(0.035)	(0.032)	(0.033)	(0.032)	(0.034)	(0.034)
Random effect								
Variance between countries (u_{0j})	0.121	0.120	0.042	0.042	0.027	0.027	0.039	0.039
	(0.038)	(0.038)	(0.013)	(0.013)	(0.009)	(0.009)	(0.012)	(0.012)
Variance between individuals (e_{0ij})	0.790		0.550		0.572		0.575	
	(0.010)		(0.008)		(0.007)		(0.008)	
Variance among professionals (σ^2_{e2})		0.588		0.463		0.512		0.570
		(0.036)		(0.030)		(0.031)		(0.035)
Variance among non-professionals (σ^2_{e3})		0.799		0.554		0.575		0.576
		(0.011)		(0.008)		(0.008)		(0.008)
-2*Log-likelihood	30,184.9	30,163.0	23,824.3	23,817.3	26,814.1	26,810.7	26,904.9	26,904.9
Difference between models	21.90		7.01		3.40		0.03	
Deviance test	0.000		0.008		0.065		0.862	
N	11,567		10,600		11,731		11,741	

*Standards errors are shown in brackets.

across countries in the effect of professional group membership on the dependent variables. We conducted further tests to determine the robustness of these findings to inclusion of various control variables at the individual level – measures of work conditions and personal characteristics – and at the country level.

The results of the next stage in our analysis are shown in Table 5, which presents all four dependent variables. Our concern is primarily with the effect of the controls on the beta estimate of professional group membership and on the variance of the professional and non-professional groups. Table 5 suggests that when the control variables are added, the effect of professional group membership on attitudes is greatly diminished and the coefficient is no longer significantly different from 0. Thus, the differences seen in Table 3 between professionals and non-professionals in terms of average attitude levels are removed once we control for the individual and country-level characteristics. Furthermore, when professional membership is included as a random coefficient (not shown), it is also insignificant, which indicates a lack of variation in this “non-effect” across countries. It is interesting to note here that when the well-known KOF index of globalization variable (Dreher, 2006; Dreher et al., 2008) was added to the eight models of Table 5 to control for the effect of globalization in each country, similar results were produced (the results can be obtained from the authors upon request)

Table 4. Two models of the influence of professional group membership on four attitudes with random slope*.

Parameter	Internal motivation to work		Commitment to work		Desire for autonomy		Social responsibility	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Fixed effect								
Intercept	3.336 (0.076)	3.335 (0.077)	3.337 (0.046)	3.336 (0.045)	3.810 (0.037)	3.810 (0.037)	3.940 (0.044)	3.940 (0.044)
Professional (0=non-prof.)	0.377 (0.035)	0.395 (0.035)	0.187 (0.032)	0.191 (0.041)	0.134 (0.032)	0.132 (0.041)	0.019- (0.034)	0.014- (0.042)
Random effect								
Variance between countries (u0j)	0.120 (0.038)	0.124 (0.039)	0.042 (0.013)	0.042 (0.013)	0.027 (0.009)	0.027 (0.009)	0.039 (0.012)	0.039 (0.012)
Professional slope variance (σ^2_{u1})		0.003 (0.007)		0.011 (0.010)		0.011 (0.010)		0.010 (0.010)
Variance among professionals (σ^2_{e2})	0.588 (0.036)	0.586 (0.036)	0.463 (0.030)	0.454 (0.030)	0.512 (0.031)	0.503 (0.031)	0.570 (0.035)	0.561 (0.035)
Variance among non-professionals (σ^2_{e3})	0.799 (0.011)	0.799 (0.011)	0.554 (0.008)	0.554 (0.008)	0.575 (0.008)	0.575 (0.008)	0.576 (0.008)	0.576 (0.008)
-2*Log-likelihood	30,163.0	30,157.3	23,817.3	23,815.0	26,810.7	26,809.1	26,904.9	26,903.0
Difference between models	5.740		2.360		1.620		1.840	
Deviance test	0.057		0.307		0.445		0.399	
N	11,567		10,600		11,731		11,741	

*Standards errors are shown in brackets.

In contrast to the reduced effect of professional group membership on average attitude levels, inclusion of the control variables reinforces our earlier finding of greater homogeneity (that is, smaller variance) within the professional as opposed to non-professional group. The significance associated with the deviance tests for all four attitudes increased, although the homogeneity levels remained insignificant for social responsibility (more on this later). Thus, although controlling for the characteristics of professionals and non-professionals, as well as for the primary features of their countries, eliminates the eliminates the "professional" effect on attitudes, the degree of diversity in attitudes among professionals still appears smaller than among non-professionals. We tested an additional model to examine whether the state acts as a moderating variable in relations between a profession and attitudes of its individual members. We added to Model 2 in Table 5 cross-level interactions (not shown) between the professional variable and country-level variables (the State Centralization Index and Former Communist

Table 5. Multilevel analysis of attitudes, including control variables at the individual and country level*.

Parameter	Internal motivation to work		Commitment to work		Desire for autonomy		Social responsibility	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Fixed effect								
Intercept	3.437 (0.070)	3.437 (0.070)	3.385 (0.041)	3.385 (0.041)	3.797 (0.043)	3.797 (0.043)	3.951 (0.055)	3.951 (0.055)
Individual-level variables								
Professional (0=non-prof.)	0.040 (0.041)	0.040 (0.037)	-0.022 (0.035)	-0.022 (0.033)	-0.039 (0.035)	-0.039 (0.033)	-0.012 (0.036)	-0.012 (0.035)
Gender (0= male)	0.224 (0.018)	0.224 (0.018)	0.072 (0.015)	0.072 (0.015)	0.096 (0.015)	0.097 (0.015)	0.164 (0.016)	0.164 (0.016)
Age	-0.001 (0.001)	-0.001 (0.001)	0.007 (0.001)	0.007 (0.001)	-0.002 (0.001)	-0.002 (0.001)	0.006 (0.001)	0.006 (0.001)
Education	0.051 (0.003)	0.051 (0.003)	0.011 (0.003)	0.011 (0.003)	0.021 (0.003)	0.021 (0.003)	0.013 (0.003)	0.013 (0.003)
No. of persons in household	-0.001 (0.006)	-0.001 (0.006)	0.007 (0.005)	0.007 (0.005)	-0.003 (0.005)	-0.003 (0.005)	0.014 (0.006)	0.014 (0.006)
Marital status: Separated	-0.007 (0.028)	-0.007 (0.028)	-0.071 (0.024)	-0.072 (0.024)	0.039 (0.024)	0.039 (0.024)	0.007 (0.024)	0.006 (0.024)
Single	0.020 (0.023)	0.020 (0.023)	-0.035 (0.020)	-0.034 (0.020)	0.013 (0.020)	0.013 (0.020)	0.011 (0.020)	0.011 (0.020)
Self-employed (0=hired worker)	0.023 (0.029)	0.023 (0.029)	0.268 (0.025)	0.270 (0.025)	0.067 (0.025)	0.067 (0.025)	-0.002 (0.025)	-0.002 (0.025)
Full-time employee (0=part time)	-0.062 (0.024)	-0.061 (0.024)	0.080 (0.021)	0.081 (0.021)	0.001 (0.021)	0.001 (0.021)	0.034 (0.021)	0.034 (0.021)

Table 5. Contd.

	Moderate†	0.159 (0.019)	0.158 (0.019)	0.129 (0.016)	0.129 (0.016)	0.156 (0.016)	0.156 (0.016)	-0.057 (0.016)	-0.057 (0.016)
Perceived autonomy:									
	High	0.174 (0.031)	0.178 (0.031)	0.283 (0.027)	0.284 (0.027)	0.313 (0.026)	0.314 (0.026)	-0.071 (0.027)	-0.071 (0.027)
	Fixed-term‡	0.025 (0.031)	0.025 (0.031)	-0.006 (0.027)	-0.006 (0.027)	0.002 (0.027)	0.001 (0.027)	0.080 (0.027)	0.080 (0.027)
Job security:									
	No limit	0.083 (0.023)	0.081 (0.023)	0.0158 (0.020)	0.014 (0.020)	0.012 (0.020)	0.011 (0.020)	0.048 (0.020)	0.048 (0.020)
	Work at home§	-0.027 (0.049)	-0.026 (0.049)	0.033 (0.044)	0.033 (0.044)	0.016 (0.042)	0.018 (0.042)	-0.080 (0.042)	-0.080 (0.042)
Work setting:									
	Work at home and away	-0.009 (0.021)	-0.009 (0.021)	0.027 (0.018)	0.026 (0.018)	0.061 (0.018)	0.061 (0.018)	0.064 (0.018)	0.064 (0.018)
Earnings (in z-scores)		0.090 (0.010)	0.089 (0.010)	0.093 (0.009)	0.092 (0.009)	0.039 (0.009)	0.039 (0.009)	-0.045 (0.009)	-0.045 (0.009)
Country-level variable									
State centralization index		0.018 (0.061)	0.020 (0.061)	0.025 (0.036)	0.025 (0.036)	-0.030 (0.037)	-0.030 (0.037)	0.037 (0.048)	0.037 (0.048)
Former Communist (0=non-com.)		-0.393 (0.132)	-0.392 (0.131)	-0.241 (0.077)	-0.240 (0.077)	0.037 (0.081)	0.038 (0.081)	-0.001 (0.104)	-0.001 (0.104)
Random effect									
Variance between countries (u_{0j})		0.072 (0.023)	0.072 (0.023)	0.024 (0.008)	0.024 (0.008)	0.027 (0.009)	0.027 (0.009)	0.045 (0.014)	0.045 (0.014)
Variance between individuals (e_{0ij})		0.733 (0.010)		0.499 (0.007)		0.549 (0.007)		0.561 (0.007)	

Table 5. Contd.

Variance among professionals (σ^2_{e2})		0.569 (0.035)		0.424 (0.027)		0.479 (0.029)		0.551 (0.034)
Variance among non-professionals (σ^2_{e3})		0.740 (0.010)		0.502 (0.007)		0.552 (0.007)		0.561 (0.008)
-2*Log-likelihood	29,307.8	29,291.5	22,773.7	22,767.4	26,316.9	26,311.9	26,604.9	26,604.8
Deviance test		0.000		0.012		0.025		0.769
N		11,567		10,600		11,731		11,741

* Standards errors are shown in brackets; † Reference category: Low; ‡ Reference category: No written contract; § Reference category: Work away from home.

variables). The joint inclusion of the interaction terms failed to significantly improve our model (full model results available from the authors upon request). Thus, the evidence consistently shows that the impact of professional group membership on individual attitudes does not depend on the degree of a state's power or centralization.

DISCUSSION

In the current study we sought to test the long-held assumption of homogeneity of attitudes among professionals, which apparently has never been empirically validated. Particularly, based on the extensive and conflicting literature on professions, we aimed to provide an answer to two questions. First, do professionals worldwide have unique and relatively homogenous work-related attitudes that differ from those of non-professionals? And second, are the professions shaped more by global forces, or are state differences stronger than global homogenizing forces in shaping professionals' work-related attitudes?

Previous studies on professions have typically focused on either one profession or one country, with few, if any, quantitative, large-scale comparative analyses of professions. Our research provides an opportunity to test our theoretical claims using a large, comprehensive cross-national data set of twenty-one countries. Furthermore, we employ multilevel statistical models, which enable us to overcome traditional limitations when testing quantitative hypotheses based on contextual data, and to specifically focus on the size of the variances instead of merely differences in the means.

Our findings clearly indicated that professionals are more homogeneous in work attitudes than are non-professionals. The variance in professionals' attitudes regarding commitment to work, internal motivation to work, and desire for autonomy is significantly smaller in comparison with that of non-professionals[9]. This finding seems to validate a long-held assumption of attitudinal homogeneity among professionals that had not previously been tested quantitatively. Supporting this assumption, based on a unique large multinational data set and methodology, is an important contribution to the field of profession studies, as it provides concrete empirical evidence for one of the foundations underlying current theories of professions, and ultimately may serve as a basis for future theories.

The finding of significantly greater homogeneity among professionals supports the normative and, in particular, the dominance approach to the theory of professions (Freidson, 1970; Goode, 1957; Hodson and Sullivan, 1994). One possible explanation for the relative homogeneity in professional attitudes is that intra-group cohesion provides professions with greater power and legitimacy. Through this cohesion, the professions establish strong boundaries and enhance

[9] It might be the case that any self-identified group will have more homogeneous attitudes than any set of randomly chosen workers in our sample. To test this hypothesis we analyzed the work-related attitudes of managers – representing a self-identified group – with the non-managers in our sample. Levene's test for Equality of Variances showed no significant differences between managers and non-managers in the variance of two of our dependent variables – motivation and autonomy. On the commitment variable a significantly smaller variance was found among the managers, while on the helping others variable we found a significantly greater variance among the managers relative to the non-managers. Thus, this simple test suggests that the level of homogeneity need not necessarily be smaller for any self-identified group of workers.

normative internal control over their members (Greenwood et al., 2002; Montgomery and Oliver, 2007). Moreover, a profession might exert formal and direct control through its code of ethics and internal self-monitoring systems (Abbott, 1983) or via professional service firms (Morgan and Quack, 2005) and indirect control through inter- and intra-organizational informal professional networks (Montgomery and Oliver, 2007; Oliver, 1997) in order to enhance homogeneity.

We also found that the effect of professional status on attitudes does not vary across countries, as the slopes for the professional groups were insignificant for most attitudes. The similarity may stem from institutional processes and the diffusion of social practices in professions around the world, through, for example, similar training processes, cross-national professional encounters, and professional work collaborations, leading to global isomorphism and similarities in professional attitudes. This finding offers, in our view, an important contribution to institutional theory.

Another systematic and surprising finding is that professionals do not appear to be different from non-professionals in their desire to help society. This finding shows clearly that classic normative theories of professionals are based on a seemingly false assumption – that professionals exhibit a particularly strong sense of social responsibility. This finding might indicate that professionals express a willingness to help society as part of an ideology aimed at gaining legitimacy from society, and not as normative expression.

Finally, the control variables added to the model appear to moderate the direct effect of professional group membership on attitudes, and show that the mean levels of attitudes are not significantly different between professionals and non-professionals. Nevertheless, the differences between the variances remained significant. These findings seem to contradict arguments that professionals constitute a distinct group defined by specific characteristics and qualities (Freidson, 1994; Macdonald, 1995).

One way to explain this contradiction is to argue that theories of the professions generally undervalued differential background variables and overly emphasized the effect of professional group membership. Furthermore, it is important to note that social processes are not simply “mean” changing. They may in some instances reduce (or increase) dispersion. A lower variance here is likely a product of processes at the macro level that work through selection, and processes at the micro level that operate on demand for entry into professional positions. However, more research is needed to settle this apparent tension. One strategy might rely on panel data sets that measure the attitudes of individuals before and after their transition to professional status. Panel data sets are becoming increasingly common across countries, and replicating such an approach across a series of countries would provide far greater leverage toward understanding the formation of attitudes across professions and nations.

Our results should be interpreted carefully in light of the study’s limitations. The current research builds on a large, cross-national, self-report survey that enabled us to explore work attitudes across a variety of countries. However, one obvious limitation is that the analysis of survey data is of necessity a rather crude method to capture cultural characteristics, individual aspirations, or the life experiences of professionals across the globe. Indeed, the judicious use of qualitative methods in combination with quantitative work might help to reveal a more refined picture of differences and nuances in contemporary global professionalism. For instance, research might point to other variables that might explain differences in attitudes across countries that we were not able to control for in the current analyses. Similarly, research might reveal characteristics of professionals which we did not account for, and which might help explain the relatively homogeneous work attitudes of the professionals, compared to the non-professionals, which remained even after we controlled for a variety of variables in our models. Further quantitative studies might then test the effect of including additional factors on the current results.

The multinational nature of the ISSP survey, like other cross-national studies, raises questions regarding the translation of the questionnaire into different languages and its interpretation in different societies. However, the ISSP includes a translation sub-committee that is dedicated to developing questions which are meaningful and relevant for different cultures, and that can be expressed in an similar manner in different countries and in all languages (Hult and Svallfors, 2002; ISSP, 2008).

There is also a need to make further inroads on how professionals might be defined. Our nominal approach to defining the professions may be improved in future work if further progress is made in this sphere. For example, an indicator of professional status might be constructed based on the nature of the work done rather than simply membership in a particular association. However, further research is required in order to explore the validity of such an indicator. Another research limitation involves the countries in our sample. The research sample contained twenty-one countries, mostly European. However, a different sample would likely include additional countries around the globe, and so might produce different results. Unfortunately, the ISSP is only able to survey associated countries. Thus, our study can be representative only for this – albeit reasonably large – group of countries.

To summarize, our study offers a long-needed validation of the assumption that there is a relatively high degree of homogeneity in the work attitudes of professionals. Our findings clearly indicate, after various controls are included, that professionals across twenty-one different and, to some extent, disparate states show

significantly higher work-attitude homogeneity than non-professionals. Our empirical work thus offered support for a theoretical framework which holds that global processes leads to isomorphism, overcoming local differences in culture, practices, and operations.

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Appendix A. Basic characteristics of the final samples, by country

Country	N	%	Gender				Age				Years of schooling				% Prof. in the Country
			Males	%	Females	%	Min	Max	Ave.	S.D	Min	Max	Ave.	S.D	
Bulgaria	388	3.2	202	52.1	186	47.9	19	65	40.8	9.3	6	21	12.5	2.7	6.7
Canada	418	3.5	204	48.8	214	51.2	18	63	36.9	11.0	2	23	15.2	3.4	8.4
Cyprus	460	3.8	285	62.0	175	38.0	18	65	38.2	11.1	2	22	12.3	3.7	8.5
Czech Republic	376	3.1	195	51.9	181	48.1	20	65	40.6	10.3	7	23	12.9	2.5	2.9
Denmark	554	4.6	270	48.7	284	51.3	18	65	39.9	10.9	6	23	12.0	3.4	4.2
France	608	5.1	280	46.1	328	53.9	18	65	37.8	10.0	3	23	13.7	3.5	3.0
Great Britain	466	3.9	223	47.9	243	52.1	18	65	39.1	10.8	9	23	12.4	2.7	3.6
Germany	756	6.3	452	59.8	304	40.2	18	64	40.8	11.3	8	18	12.3	3.2	6.5
Hungary	495	4.1	268	54.1	227	45.9	18	60	38.1	10.5	5	17	11.8	2.2	2.4
Israel	496	4.1	309	62.3	187	37.7	18	65	35.5	11.7	2	22	12.9	2.7	5.0
Italy	279	2.3	189	67.7	90	32.3	19	63	39.0	10.5	1	20	11.5	3.7	2.2
Norway	1,151	9.6	603	52.4	548	47.6	19	65	39.5	10.9	9	23	12.8	2.8	4.3
New Zealand	232	1.9	126	54.3	106	45.7	20	65	42.4	11.1	3	22	13.0	3.4	5.6
Philippines	460	3.8	306	66.5	154	33.5	18	65	39.3	11.4	1	21	9.3	3.9	0.9
Poland	463	3.9	242	52.3	221	47.7	18	61	39.1	9.9	4	17	11.8	2.7	2.4
Portugal	773	6.4	415	53.7	358	46.3	18	65	39.5	11.6	1	22	8.1	4.4	1.8
Russia	516	4.3	257	49.8	259	50.2	18	64	39.5	10.7	3	22	12.1	2.9	7.9
Slovenia	358	3.0	189	52.8	169	47.2	18	65	36.3	9.5	3	19	11.7	2.7	2.2
Sweden	636	5.3	333	52.4	303	47.6	20	65	42.8	11.1	1	22	12.2	3.5	3.8
Switzerland	1,478	12.3	809	54.7	669	45.3	18	65	39.8	11.0	9	17	11.4	2.4	5.8
United Sates	652	5.4	300	46.0	352	54.0	18	65	39.5	10.7	2	20	13.9	2.6	5.8
Total	**12,015**	**100**	**6,457**	**53.7**	**5,558**	**46.3**	**18**	**65**	**39.4**	**10.9**	**1**	**23**	**12.1**	**3.4**	**4.6**