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A SECOND OPINION: RETHINKING THE PUBLIC-PRIVATE DICHOTOMY FOR HEALTH INSURANCE

Brian Gran

Does the public-private dichotomy effectively describe health insurance systems in the advanced industrialized democracies? Is the boundary separating the public and private sectors accurate for studies of social policy formation and cutback? This article has three goals. The first is to discuss reasons for reconsidering the public-private dichotomy, as it applies to health insurance systems. The second is to offer a reconceptualization of the public-private demarcation useful for analyses of health insurance systems; the author presents four sectors that may illuminate patterns of health insurance for different OECD countries: the social, individual, public, and market sectors. The third goal is to present results using a new methodological approach useful for studying complex social phenomena: the fuzzy-set approach, which allows researchers to treat social phenomena as partially belonging to more than one category. This approach is employed to demonstrate that health insurance provision rarely is solely public or private, but is formed by a combination of sectors. Underlying these three goals is the contention that comparative and historical sociological researchers can offer innovative approaches to the study of health insurance and the interests served by public and nonpublic health insurance programs through reconceiving the public-private dichotomy.

Does the public-private dichotomy effectively describe health insurance provision in the advanced industrialized democracies? Or does the dichotomy instead obscure the different ways in which the state cooperates with other sectors to provide health insurance, and how this cooperation limits health insurance provision? Is the boundary separating the public and private sectors adequate for studies of social policy formation and cutback?

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Analysts have warned governments to prepare for problems that their public sectors may not be able to manage (and perhaps are causing) (1, p. 3). One such problem is the "demographic bubble," soon to burst into retirement (2, pp. 1–4). Long life spans and the increasing size of older-age groups, including the "baby boomers," are expected to bring public sectors to their knees (3, pp. 25–31; 4, p. 373). Analysts contend that the public sector not only cannot manage these burdens, but it has harmed economies and individual initiative needed to handle these challenges (5; 6; for criticism of these claims, see 7, pp. 38–45; 8; 9; 10). Across Western democracies, various political parties and analysts argue that the way out of this apparent dilemma is to place more responsibility on the private sector. Proponents argue that the private sector is more efficient and the public sector's endeavors make matters worse. In an age when international economic competition is expected to accelerate, political parties, nongovernmental organizations, and analysts contend that expanding the private sector is the best way to stay ahead, or catch up (3, pp. 3–5).

Through examining the fuzzy boundary between public and private provision of health insurance, comparative and historical sociological researchers can offer innovative approaches to the study of social policy formation and the interests served by social policy programs (see 9, pp. 1–2; 11; 12). This article seeks to make two contributions to comparative and historical research on the welfare state. The first is a reconceptualization of the public-private demarcation useful for analyses of health insurance provision. It presents four sectors that may illuminate patterns of health insurance for different OECD countries: the social, individual, public, and market sectors. Through evaluation of four criteria, this article suggests that when we allow for greater diversity than the public-private dichotomy, few systems can be strictly characterized as public or private in the OECD countries, with the public sector playing a role in nearly all health insurance provision. The second contribution is a new methodological approach useful for analysis of health insurance provision, the fuzzy-set approach (13, 14), which allows social phenomena to belong partly or entirely to different categories. This approach enables researchers to evaluate health insurance provision as neither completely public nor completely private, but often based in multiple sectors.

I first examine extant notions of the line dividing public and private health insurance. After offering a four-sector conception of health insurance provision, I undertake an analysis of health insurance provisions along the four sectors using four criteria. These analyses indicate that membership in the four sectors is fuzzy; most health insurance provision is a mixture. I then introduce the fuzzy-set approach and use it to examine health insurance provision across 15 countries. The article concludes by suggesting that social scientists can make a new contribution to studies of welfare states and public policy by employing the fuzzy-set approach to rethink what belongs in analyses of the welfare state.

CURRENT BOUNDARIES BETWEEN PUBLIC AND PRIVATE PROVISION

Because of space constraints, this article presents some representative demarcations that contemporary analysts use to characterize health insurance provision.

Dichotomies

Probably the most common approach to classifying health insurance is to use a dichotomy to identify sectors and specify factors in order to determine whether the provision is public or private. The dichotomy typically splits health insurance provided by the public from that provided by the private, what is commonly meant as the state and the market, respectively. The *state* heading usually suggests government at all levels. The *market* heading frequently incorporates several actors, often simply representing nonstate actors. To determine which part of the dichotomy provides the health insurance, several criteria are often evaluated. These criteria commonly include accessibility and the source of the provision.

Papadakis and Taylor-Gooby (15) use probably the most common public-private conception in their analysis of private provision of former public responsibilities. Employing a public-private dichotomy, they equate the public with the state and the private with the market (15, p. ix). Although the simplicity of their approach is appealing, their conception omits from analysis the different ways in which the state interacts with the market to provide health insurance. Their lichotomy neglects other actors who provide health insurance but cannot idequately be described as state or market, such as trade unions—an individual obtains health insurance through a trade union through trade-union membership, not because of her citizenship status or on the basis of a wage relationship. While Papadakis and Taylor-Gooby's description of public sector activity, and to a esser extent private, is clear, their conception is overly broad.

One problem with using a bipolar dichotomy is its requirement of duality. As ientioned above, the state or the market does not provide some kinds of health isurance. Most bipolar dichotomies place all nonstate actors under the *private* eading. Lumping together nonstate actors under this heading may obscure which actors provide health insurance, how their motives differ, and how we an separate them. Ramesh's definition (16, pp. 1093, 1104) of the private is roader than Papadakis and Taylor-Gooby's and includes the "family, comunity, and market." The advantage of Ramesh's conception is its complexity. e acknowledges the role not only of the market but also of the family and ommunity in providing health insurance. Placing these two kinds of social actors ider the *private* heading, however, makes this category too broad. It logically ads to Papadakis and Taylor-Gooby's dichotomy. Defining public sector tivity as based in legislation ignores other ways in which the public sector ovides health insurance.

The dichotomies described above have the advantage of simplicity and clarity. A common criterion among them is that at a minimum, we can identify public provision by whether it is funded by tax revenue. Some kinds of health insurance, as previously mentioned, are funded from a variety of sources. Consequently, a problem they share is including actors that, by some of their own definitions, do not fall into their conceptions of public or private. As most of the dichotomies imply and some make explicit, their conception of *public* is not wholly based on tax-revenue financing. Some notions depend on whether all individuals are eligible for the insurance and who manages the provision. Many directly point to the importance of stimulation—for example, whether government encourages or mandates health insurance provision. None of the dichotomies provide complete conceptual tools for identifying health insurance provision.

Trichotomies

Trichotomies are useful for analyzing the public-private boundary. They enable the researcher to step beyond the state-versus-market dichotomy and place in the equation other actors that provide health insurance. Richard Rose contends that the public-private dichotomy is "obsolete" and he maintains that a better understanding of welfare will be gained if we examine three actors: "the state (or public sector), the market (often described as the private sector), and the household" (17, p. 74).[1] Rose contends that a society's complete welfare system consists of the total endeavors arising from all three sectors (cf. 18). He identifies public contribution to welfare as including goods and services *produced* by public agencies (national, state, or local) or *funded* by tax revenue.

According to Rose, the private contribution to welfare can assume two distinct shapes. He says we find the first in the market sector of the economy, where organizations sell their services, usually for profit. They are distinct from the state because they are not funded by "the revenue that government collects in taxation" (17, p. 73). The other major source of welfare beyond the state is the household. According to Rose, the household is distinct from the state because it is far less subject to public regulation than are "private sector hospitals, schools, and pension programs" (17, p. 74). He contends that the household is separate from the market because it is independent of the cash nexus linking producers and consumers in the private sector, and linking public employees and the state in the public sector. Rose acknowledges the role of institutions such as nonprofit agencies, but places them in the private sector (17, p. 89). He notes funding cooperation and the overlapping boundaries arising from "direct financial provision" from the state directed to the household and market, regulation, and "beneficial legislation such as tax expenditures" (17, p. 74).

[1] Rose (17, p. 74) describes private as "nongovernmental."

Some entities do not clearly belong in the categories Rose delineates. A not-for-profit agency that sells services at cost or a cooperative that organizes a health insurance plan, probably subject to government regulation, does not belong in either the market or state categories. His conception does not allow for demarcation arising from eligibility, which usually is employed to distinguish public from private. On the other hand, his boundaries are not sufficiently tight and permit too much overlap.

PROPOSED CONCEPTUAL FRAMEWORK

The Four Sectors

I hope to improve upon the existing theories and capture the complexity in health insurance provision by proposing a framework based on four sectors that uses four criteria to identify types. Scholars and researchers stand to gain a better picture of how health insurance is provided, responsibilities are distributed, and who receives health insurance through the use of these four distinct sectors. The first sector, which is probably the most novel to the debate, is the *social sector* (19, pp. 3–4; 20, p. 18; cf. 21). The social sector probably was more visible in the past, but still is an important component of health insurance provision and sometimes is invoked as a way to manage perceived shortcomings of contemporary welfare states.

The social sector is defined as an arena outside the state or employment relationship where individuals cooperate to furnish health insurance (cf. 22, pp. 147, 156; 23, p. 311; 24, p. 7). Together, individuals combine resources to furnish health insurance. An individual may use resources derived from her employment relationship, but she forms an association with individuals external to the wage contract (i.e., not the employer acting as an employer) and outside her standing as citizen (or long-term resident in some circumstances). The social sector is based on individuals' decisions to organize collectively their resources for their own good (25). Examples of health insurance plans based in the social sector may include insurance offered by trade unions, cooperatives, and religiously oriented nonprofit organizations. Members of these organizations cooperate to provide health insurance and in many countries have important roles in the health insurance system. For instance, Belgian mutual societies and trade unions cooperate with governmental agencies in managing the public health insurance system. Unions in the United States have historically bargained for employment-based health insurance plans as opposed to a public health insurance plan (26). Various religious and "fraternal" organizations offer health insurance plans to their membership in the United States. Some analysts call for a greater role for these organizations in the U.S. health care system (27).

"The family" is included in the social sector for this analysis. The family is treated as a group of people who can collectively provide health insurance

(28, p. 212, citing 29, p. 7). By taking this approach, groups are included that in some places and at different times are not legally recognized as a family (30). The social sector is useful for an analysis of health insurance because we gain more by placing kin and family in the social sector than in the individual sphere or private sector (see 22, p. 119; 31, p. 164). Including kin and family in the social sector highlights provision made between kin and family members and the difficulties associated with these kinds of cooperation (9, pp. 3–9; 32).

Separate consideration of the social sector is useful because of the historical precedent of relying on nonmarket, nonindividual groups to provide economic security (24, pp. 5–12; 33). Attention to nonprofit groups, for instance, may be important as some countries move former public responsibilities to what many consider the private sector (see 10). Delineating the social sector is important when political leaders and analysts are nostalgic for friendly societies (but see 8, pp. 673–674; 10, p. 9).

The second sector is the *individual sector* (34). This is the sector in which the individual provides her own health insurance (see 35, p. 109). While the funds she uses to make the provision may come from her employment relationship, the individual makes the decision about how to use the funds. To a larger degree than many employment-based health insurance plans, the individual has at least one more choice, albeit limited by resources and income, than she does in the way her employer treats her deferred wage. For whatever reasons, perhaps because she cannot gain access to or form a group in the social sector, the individual uses resources in her possession to furnish her own health insurance. Although individual-based health insurance plans are found in many countries, some may differ in important ways and others may share surprising similarities. For instance, the state may play a larger role in U.S. individual-based health insurance plans than in individual plans found in Denmark and Sweden.

The third sector is the *market sector*, which is the site where an individual is paid by the employer for whom she works (cf. 24, pp. 5–6). Rarely now, but more common in the past, some employers arguably provided health insurance plans as a legal "gift" to the employee.[2] Health insurance can result from collective bargaining, but is provided to the employee for the work she has performed for the employer. The defining characteristic of the market sector's provision of health insurance is that it is in the form of a wage. The fundamental feature is that the employee does not have complete control over the wage, but it is something over which the employer and employee negotiate. I do not mean to suggest that the employer and employee are on equal bargaining ground. Rather, the point is that the employee does not have complete discretion over the health insurance. Health insurance plans based in the market sector are common in the United States, but

[2] It is not difficult to view these "gifts" as deferred wages over which the employee has no control and the employer has complete discretion.

are also found in Finland. One important difference between U.S. and Finnish market-based-plans is that Finnish employers in 1990 were *required* to provide health insurance.

The final sector that furnishes health insurance provision is the public or the *state sector*. The state is the organization by which a society controls its territory and the people within it (36, p. 7), financing its activities through taxation (24, p. 5; 37, p. 131). The welfare state is what many analysts have in mind when they refer to the state's (see 25, p. 290) or public sector's provision of health insurance. The welfare state is the mechanism by which the state, among other activities, distributes various goods and services to citizens and long-term residents, such as health insurance, old-age pensions, and education (38, p. 750; but see 18, p. 69). Welfare states can use policies to modify social status and opportunities (9; 37, p. 132).

Highlighting some distinguishing characteristics of the sectors is useful. An important difference between the state and social sectors is the coercion found in the state sector and cooperation found in the social sector. Welfare states, for instance, typically require citizens and long-term residents to participate in a public health insurance plan. A health insurance plan based in the social sector relies on the cooperation of its participants. A market-based health insurance plan takes the form of a wage only available to employees, but the employee does not have complete control over the wage. Eligibility for market-based health insurance plans requires an employment relationship. Unlike public health insurance, by itself the status of citizen or long-term resident is insufficient. Only persons in an employment relationship are eligible for market-based health insurance plans. A key characteristic of individual-based health insurance plans is that the individual chooses to use her own resources to participate in the plan. She is not coerced and does not directly cooperate in the plan.

The Criteria

To decide whether a health insurance provision is social, individual, market, or public, four criteria can be evaluated:

1. What *source* provides the health insurance?
2. Who is *eligible* for the health insurance?
3. Who *stimulates* the health insurance provision?
4. Who *manages* the health insurance provision?

contend that these four criteria are necessary to making a decision as to whether rovision is social, individual, market, or public. The first, the *source* of the rovision, is a necessary component because the funding and distribution of the rovision depend on the source (39, pp. 17, 23; 40; 41). Although a government may regulate or mandate health insurance provision, for many people the

provision will have its largest impact based on whether it is provided solely from their means, cooperatively with another, or indirectly through the state. The source is important, because the insurance provision is often redistributive: the amount the individual contributes is different from the amount she receives in return. This conceptualization of source includes Rein and Rainwater's proposition (42, p. 41) that the public-private classification depends on who provides and pays for the benefit. It does not require complete funding from one source, but envisions four interactive poles from which funding for a specific insurance provision arises, from possibly more than one or from all four sectors.

Eligibility is necessary (39, p. 23) but by itself insufficient for determining whether provision is from the social, individual, market, or public sectors. Eligibility is important because if an individual cannot participate in an insurance arrangement, she must rely on her own savings to provide health insurance.[3] Receipt of public provision is usually understood as universal: all citizens or long-term residents are eligible for public insurance provision. Rein and Rainwater (44, p. 18; cf. 45) assert that benefits can be ranged along a continuum, with entitlement by right at one end and contract right at the other. Market arrangements are exclusive (46, p. 16). According to the International Labor Organization's definition (47), market arrangements contrast with social security because social security is provided to all of a society's members. Focusing on the eligibility factor reveals whether all residents are eligible for a source provided by the government, whether a source provided in the market is based on an exclusive arrangement, or whether a collectively sourced provision is only for its members (or for some members, for some members and their partners, or other arrangements).

Whether the individual responds to her own foreseen need or to tax incentives, or is bound by legislation, the *stimulus* for providing the health insurance is a necessary but insufficient component to deciding whether it is social, individual, market, or public (28, p. 74; 44, p. 18; 48, p. 151). Rein and Rainwater note the importance of focusing on the "interplay of institutional forces in the initiation and implementation of social policies" (44, p. 18). Similarly, Titmuss (28, p. 88) stresses the importance of penalties and rewards in provision. The stimulus component is often overlooked, or skipped over, by assuming that it is the same as the source or management (see below). Determining the stimulus is necessary to deciding whether the provision is social, individual, market, or public because the health insurance is not provided without it. Focusing on stimulus, occupationally based health insurance mandated by law may be coded as public.

[3] In terms of production, while participation in public provision is often viewed as involuntary, private is perceived as by choice. Van Gunsteren and Rein (43, p. 130) argue that "public arrangements" are universal, "private-collective arrangements" are for collectivities that are part of the production structure and frequently are coercive, and private-personal arrangements arise from individual decisions.

According to Rein and Rainwater, an example of stimulation is the "incentives that government uses to induce firms to do what government would like them to do" (43, pp. 42–43). The provision of a health insurance plan may be prompted by government mandate, arise from a collective agreement, or come about because an individual has the resources and reasons to pay for her own health insurance. The stimulus is less clear if the government offers incentives to encourage individuals to pay for their health insurance, such as tax deductions (see 49, p. 395; 50, p. 89), but requires the individual to act and be able to save. While a firm may take advantage of "superdollars," it may offer a health insurance plan to buy worker loyalty as well as to invest in and retain human capital (44, p. 16; 51, p. 10). If tax incentives are removed and if the individual has the ability and acts on her own to provide health insurance, the action is considered individual. The stimulus component typically makes the public-private boundary fuzzy (51, p. 3), because most typifications focus on the source of the money and who is eligible for the insurance provision (but see 52, p. 11).

The fourth component is *management* of the health insurance provision. Management is important for determining whether provision should be characterized as social, individual, market, or public. Who manages and how they manage may ultimately make health insurance provisions dissimilar. Although a government may require the provision of health insurance by employers, great leeway is frequently given. While a government may mandate or stimulate occupational-based health insurance, a firm may manage the plan so that the govenment's goals are not met (see 48, pp. 150, 155, on control and individual powers; see also 53, pp. 33, 270). Management can be used to make collective health insurance assume qualities associated with public health insurance plans, such as redistribution from high-income participants to low-income participants. Conversely, employees often do not have direct control over management of some aspects of their health insurance plan (43, p. 138).

Together, these four components can determine whether health insurance provision is social, individual, market, or public. Each component is "necessary" but by itself not sufficient to determine the type of provision. Besides being necessary to the determination, the four components are important for other reasons. They allow for change over time: a provision may initially be characterized as public, but if the stimulus or source changes, for example, its typification may change. Like other notions, the above conception allows for impure provision. Mandated health insurance, often placed in gray areas, will likely fall in a clearer category. The quatripolar conception takes into account actors that played large roles in the past, and may again in the future. The determination of social, individual, market, or public is not, however, made by one component or actor.

DATA

This article provides a snapshot of qualitative information for the early 1990s of 40 separate health insurance plans found in 15 countries: Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Ireland, Japan, the Netherlands, Norway, New Zealand, Sweden, the United Kingdom, and the United States. One important contribution to comparative research on the welfare state is Gosta Esping-Andersen's *Three Worlds of Welfare Capitalism* (50) and his recent book *Social Foundations of Postindustrial Economies* (54). In his books Esping-Andersen contends that the welfare states of Western capitalist countries generally belong to one of three types: social democratic or universalist, conservative or based in social insurance, and liberal or residualist.[4] Of the countries examined here, five belong to the social democratic or universalist world: Denmark, Finland, the Netherlands, Norway, and Sweden. Esping-Andersen suggests that a social democratic welfare state is comparatively committed to universal social protection and "comprehensive risk coverage" (54, p. 78). Social democratic welfare states have tended to exclude "private welfare" (54, p. 79). Welfare states of four countries belong to the conservative or social insurance world: Austria, Belgium, Germany, and Japan. According to Esping-Andersen, these welfare states have focused on social insurance, maintaining status rather than redistributing services. The social insurance focus "has meant that purely private market provision of welfare remains marginal" (54, p. 83). Four countries belong to the liberal or residualist world: Australia, Canada, New Zealand, and the United States (50, p. 74; 54, pp. 74–94). Liberal or residualist welfare states tend "to promote market solutions" and disfavour citizens' entitlements," and the state is expected to play a minimal role in social protection (54, pp. 74–75). Ireland and the United Kingdom do not clearly fit the three types of welfare states identified by Esping-Andersen. In the early 1990s, the United Kingdom's welfare state to a degree belonged to the universalist and residualist worlds (54, pp. 85–86). Esping-Andersen classifies Ireland in the early 1990s as liberal (54, p. 77) but Ireland in 1980 as having moderately strong conservative attributes rather than liberal or social democratic (50, p. 74). The 15 studied countries also vary in their types of public and private health care programs. Some are characterized as providing universal health care, others as offering universal health insurance, and some as relying on the private sector.

Data are for the early 1990s and primarily come from two sources. Most of the data, particularly for the "private" plans, are from the OECD (55, 56). The U.S. Social Security Administration's publication *Social Security Programs Throughout the World* (57) also provides information about public health insurance plans.

[4] I focus on Esping-Andersen's characterizations found in his 1999 book (54) because they concentrate on 1990 data; his 1990 book (50) focuses on 1980.

As mentioned, this article evaluates qualitative differences among health insurance plans for the early 1990s to distinguish the sectors that support health insurance. The optimal choice is interval-level information by which we gauge the contribution of sectors, rather than noting their contribution in general. The analyses presented here are a start in this direction. They reveal the need for the collection of these kinds of data: The unit of analysis is the health insurance plan (see 52, p. 9). Consequently, for most countries more than one kind of health insurance plan is evaluated.

RESULTS: A SECOND OPINION

The first step is to examine briefly the four criteria to evaluate whether the alternative, four-sector framework applies to health insurance systems. For the source of health insurance, for example, Table 1 indicates that both the government and the market contribute to occupational programs of some countries, like Austria (AUSOCP). The employer and employee as well as the government pay for the health insurance.

The determination of eligibility for the health insurance provision is made by examining the ways an individual can participate in the provision. Some kinds of health insurance are available only to persons working for an employer, such as the New Zealand occupational program (NZLOCP). Other occupational plans, like the Swedish program (SWEOCP), allow individuals outside the paid labor market to participate in the occupation-based health insurance plan.

The stimulus of the health insurance provision may arise from government compulsion, as is the case for the Australian public plan (AULPUB). The state plays a role in managing all the health insurance plans, but often with other sectors. Employers, employees, mutual societies, and the government, for example, manage the Belgian public program (BELPUB).

An important argument presented here is that scholars and researchers need to replace the public-private dichotomy with a more precise characterization of contemporary health insurance provision. An inductive strategy is taken to avoid starting with preconceived labels of health insurance plans while pursuing the goal of identifying homogeneous groups. An alternative methodological approach developed by Ragin (13, 14), the fuzzy-set approach, is employed.

Introduction to the Fuzzy-Set Approach

Fuzzy sets allow the social scientist to combine qualitative and quantitative approaches. As is true for qualitative comparative analysis (58), the fuzzy-set approach is based on understanding cases as configurations of parts. One contribution of this approach is that it allows partial membership of a case in a given configuration. This attribute of the fuzzy-set approach permits the researcher to evaluate the degree to which a case conforms to an ideal type. In the case of health

Table 1

Health insurance systems, circa 1990

Plan	Case no.	Source	Management	Stimulus	Eligibility
AULPUB	1	St*I	St	St	St
AULIND	2	I*So	I*So*St	I	I*So
AUSPUB	3	M*St*So*I	So*St	St	M*So*I
AUSIND	4	I*St	I*St	I*St	I*So
AUSOCP	5	M*St	M*St	M*St	M
BELPUB	6	M*St*So*I	M*St*So	St	M*So*I
BELSOC	7	So*I*St	So*St	So*St	So
CANPUB	8	St*I*M	St	St	St
CANOCP	9	M*St	M*St	M*St	M*So
CANIND	10	I	I*St	I	I*So
DENPUB	11	I*St	St	St	St
DENIND	12	I	I*St	I	I*So
FINPUB	13	M*St*I	St	M*St	St
FINOCP	14	M*St	M*St	M*St	M*So
FININD	15	I	I*St	I	I
FRGPUB	16	M*St*I*So	M*St*I	St*So	M*St*I*So
FRGOCP	17	M*St	M*St	M	M*So
FRGIND	18	I*So*St	I*So*St	I*So*St	I*So
IREPUB	19	St*I	St	St	St
IREIND	20	St*I	St*I	St*I	So*I
JPNPUB	21	M*St*I*So	St	St	St
JPNPUB	22	M*St*I*So	St	St	M*So
JPNIND	23	I	I*St	I	I*So
NETPUB	24	St*I*So	St	St	St
NETIND	25	I	I*St	I	I*So
NORPUB	26	St*I	St	St	St
NZLPUB	27	St*I	St	St	St
NZLSOC	28	I*So	I*So*St	I*So	I*So
NZLOCP	29	M	M*St	M	M
SWEPUB	30	M*St*I	St	St	St
SWEOCP	31	M*St*I	M*St	M	M*So
SWEIND	32	I	I*St	I	I*So
UKMPUB	33	St*I*M	St	St	St
UKMOCP	34	M	St*M	M	M*So
UKMIND	35	I	St*I	I	I

Table 1

(Cont'd.)

Plan	Case no.	Source	Management	Stimulus	Eligibility
USA Medicare	36	M*I*St	St	St*I	M*St*So
USA Medicaid	37	St	St	St	St
USAOCP	38	M*St	M*St	M*St	M*So
USASOC	39	So*St	So*St	So*St	So
USAIND	40	I*St	I*St	I*St	I*So

Sources: OECD (55, 56) and U.S. Social Security Administration (57).

Note: Here and in Tables 3–7, the following abbreviations are used. Countries: AUL (Australia), AUS (Austria), BEL (Belgium), CAN (Canada), DEN (Denmark), FIN (Finland), FRG (Germany), IRE (Ireland), JPN (Japan), NET (the Netherlands), NOR (Norway), NZL (New Zealand), SWE (Sweden), UKM (United Kingdom), and USA (United States). In plan names: PUB, public; IND, Individual; OCP, occupational; SOC, social. Under *Source:* St, state; I, individual; M, market; So, social.

insurance, we can compare a case of health insurance provision to a pure market, pure public, pure individual, and pure social case.

A full description of the fuzzy-set approach is not possible here, but a basic overview and some examples will suggest the power of this new methodological approach. After contrasting the basis of the fuzzy-set approach, fuzzy logic, to "crisp" formal logic, I offer an example of the fuzzy-set approach. I then describe the coding of the 40 cases of health insurance provision for an analysis using the fuzzy-set approach. After determining the membership of each case for four ideal types of health insurance provision—the state, the market, the social, and the individual—I evaluate the degree to which the cases are homogeneous and conform to the four ideal types. The article concludes by highlighting the advantages of the fuzzy-set approach.

To explain briefly fuzzy logic, let me first compare it with its more widely known cousin, "crisp" logic. Crisp logic is based on the assumption of two exclusive categories, membership and nonmembership. An item is either a member of the set or it is not a member of the set. Membership in the set is indicated with a value of 1; nonmembership is indicated as 0. A case can be a full member, a full nonmember, or in between. The fuzzy-set approach allows us to assess degrees of membership in a set.

Ragin emphasizes that the "'fuzzification' of crisp logic brings formal logic much closer to verbal formulations"; "fuzzy logic offers a mathematical system that makes allowances for the vagueness and imprecision of verbal formulations" (13, p. 1), while at the same time allowing the researcher to use the gradations people usually encounter in everyday life. Rather than imitate quantitative

gradings, the fuzzy-set approach allows the researcher to examine the degrees by which a case belongs to a category (13, p. 2). Fuzzy logic refines crisp logic by allowing different levels of membership. Rather than crisp membership (value of 1) or crisp nonmembership (value of 0), fuzzy logic allows for gradients in membership from 0 to 1. Variable-oriented analysis is based on crisp populations. Fuzzy logic is based on fuzzy sets.

Before proceeding with the fuzzy-set analyses, I need to review two basic principles of fuzzy sets, the intersection and union of sets. First, when fuzzy sets intersect (logical *and*), the membership value of an element in the intersection is the *minimum* value of its separate membership scores in the constituent sets. Second, when fuzzy sets are joined (logical *or*), the membership value of an element in the union of sets is the *maximum* of its separate membership scores in the constituent sets. The minimum principle states that a case conforms to the ideal type by the minimum value of its scores in the relevant sets. As an example, if we are studying capitalist democracies, and a country scores .7 on capitalism and .3 on democracy, the minimum principle scores the country as .3. If we took the country's average, the country would score .5.

For this study, the minimum is the basis for determining the degree to which a case conforms to an ideal type. It is important to remember that to make this assessment, the evaluation is combinatorial. All components of a case are considered to identify the level at which it conforms to an ideal type. The minimum principle states that the level of conformity of a case to an ideal type is set by the minimum value of scores for the case. The minimum is analyzed because a case is treated as a member of the set defined by an ideal type only if it has all the elements identified as part of that ideal type.

An example is the set of countries that in 1980 had high public pension decommodification and high expenditures on private pensions (Table 2). Public pension decommodification is the degree to which a public pension provides a socially acceptable standard of living independent of the paid labor market (50, p. 37). In formal logic terms, this is the set of OECD countries that both decommodify *and* have high "private" pension expenditures (the intersection of these two sets). Information about these two qualities comes from Esping-Andersen's *Three Worlds of Welfare Capitalism*. His Table 2.1 (50, p. 50) indicates the degree of decommodification in old-age pensions; his Table 3.1 (50, p. 70) presents private pensions as a percentage of total pensions. Their scores are converted so they are comparable.

To establish fuzzy sets, the first task is to establish what Ragin calls three important anchors: the point at which crisp membership is reached (score of 1), the point at which crisp nonmembership is reached (score of 0), and the point of maximum ambiguity in whether a country is "more in" or "more out" of the set (score of .5) (13, p. 6). For the sake of example (see Table 2), a value of 20 belongs in the set of decommodifying countries (score of 1). For private pension expenditure, countries with scores greater than 40 are members of the set of countries

Table 2

Public pension decommodification and high private pension expenditure, 1980

	Public pension decommod-ification: raw	Private pension as % of total pensions: raw	Pension decommod-ification recoded	Private pensions recoded	Minimum (*and*)
Australia	5	30	.33	.75	.33
Austria	11.9	3	.67	.1	.1
Belgium	15	8	.8	.2	.2
Canada	7.7	38	.33	.95	.33
Denmark	15	17	.8	.5	.5
Finland	14	3	.75	.1	.1
France	12	8	.67	.2	.2
West Germany	8.5	11	.33	.3	.3
Ireland	6.7	10	.33	.3	.3
Italy	9.6	2	.5	.1	.1
Japan	10.5	23	.5	.6	.5
Netherlands	10.8	13	.5	.3	.3
New Zealand	9.1	4	.5	.1	.1
Norway	14.9	8	.8	.2	.2
Sweden	17	6	.9	.15	.15
Switzerland	9	20	.4	.5	.4
United Kingdom	8.5	12	.33	.3	.3
United States	7	21	.33	.5	.33

with high private pension expenditure (score of 1). For both decommodification and private pension expenditure, nonmembership is scored as 0.

The crossover point, which is the point where maximum ambiguity exists, s scored as .5. The crossover point is not the mean or median, but we select it on he basis of our substantive and theoretical knowledge. The crossover point is onceptually defined. As its name suggests, it is the point at which maximum mbiguity exists in whether a country is "more in" or "more out" of the set of ountries that decommodify and have high private pension expenditures. "All hree empirical anchors are established using theoretical and substantive knowl-dge and are specific to the verbal formulations that inspire the investigation" 13, p. 6). Four countries are at the crossover point for decommodification: aly, Japan, the Netherlands, and New Zealand. All four are ambiguously treated

in the welfare state literature. Although having a moderate decommodification score in 1980, Italy and New Zealand provided generous replacement ratios for average-paid workers (59). Esping-Andersen gives Japan and the Netherlands higher decommodification scores (50), but in 1980 they provided lower replacement ratios than Italy and New Zealand (59). The crossover point for private pension expenditure includes Denmark, Switzerland, and the United States. The United States is often considered as heavily relying on private pensions (60, p. 64), but its raw score suggests that its private pension expenditure is not an outlier. As a Scandinavian welfare state, Denmark is expected to have smaller private pension expenditure. According to Esping-Andersen's data, however, Denmark's expenditure level is similar to that of Switzerland and the United States, countries that according to Esping-Andersen rely on private pensions for retirement-income provision (50).

This example considers the minimum, which is logical *and.* Australia has a score of .33 on its membership in the set of high decommodification systems and a score of .75 on its membership in the set of high private systems. The intersection of these two sets (the set of systems that decommodify and have high private pension expenditure) is .33, the minimum or smaller of the two membership scores. To reiterate, the minimum principle says that to determine the degree to which a case conforms to an ideal type, the researcher considers its lowest membership score. Taking this approach, Denmark and Japan have the highest minimums. They are closest to the ideal type of a country that combines decommodification and high private pension expenditure. Austria, Finland, Italy, and New Zealand have the lowest minimums in the set of countries that decommodify and have high private pension expenditure.

Considering the above example, the measurement of fuzzy membership seems to require simply a recoding of quantitative data so that they vary between 0 and 1. It is possible to establish the minimum value as 0 and the maximum as 1, and then recode the variables in between according to their distance from the minimum or maximum. This standardization of variables from 0 to 1 is *not* the approach of fuzzy sets. Ragin suggests that mechanistic transformations of interval-scaled data produce poor measures of fuzzy membership (13, p. 5; see also 61). This example tried to depict the countries as belonging to ideal types of decommodification and high private pension expenditure.

Fuzzy Sets and the Public-Private Dichotomy

The minimum membership in the set is evaluated for these analyses of health insurance provision. When examining the state sector, for each criterion the public is scored as 1, nonpublic as 0 (no public involved), public*market as .5, and public combined with any other sector as .75 (Table 3). Public*market is scored as .5 because this combination conceptually is "fuzzy," it is neither public nor

market. A similar approach is taken to market, social, and individual. Considering the market, each criterion is scored as 1 for market, 0 for nonmarket (market is not involved), .5 for public*market, and .75 for market combined with another factor (Table 4, p. 302). Social and individual are conceptually treated as opposite for the purposes of these analyses. Consequently, for analyses of social, each criterion is scored as 1 for social, 0 for nonsocial, .5 for social*individual, and .75 for social combined with another factor (Table 5, p. 304). Likewise, each criterion is scored as 1 for individual, 0 for nonindividual, .5 for individual*social, and .75 for individual combined with another factor (Table 6, p. 306).

For the public sector, only one program conforms to the ideal public health insurance plan: the U.S. Medicaid program of the early 1990s. The state is the only sector involved in the source, eligibility, management, and stimulus criteria for this case of insurance provision. Of the 40 cases, only seven score above .5 for public-based health insurance: the systems designated as public in Australia, Denmark, Ireland, the Netherlands, Norway, New Zealand, and the Medicaid system of the United States. This result suggests that welfare states characterized as liberal and social democratic have similar approaches to public health insurance provision. Public health insurance provision for welfare states depicted as Christian democratic or conservative, including Austria, Belgium, and Germany, receive scores of .5 (Germany) or 0 (Austria and Belgium). According to these results, Christian democratic welfare states take a distinct approach to public provision of health insurance. All programs described as nonpublic receive scores of 0 (Table 7, p. 7).

In contrast, no case conforms to the ideal market, social, or individual health insurance program. Not one case scores above .5 for market health insurance. The cases that do receive a fuzzy score for market health insurance are occupational plans for Austria, Canada, Finland, Germany, New Zealand, Sweden, the United Kingdom, and the United States. Compared with public provision, these eight cases include welfare states characterized as social democratic (Finland and Sweden), conservative (Austria and Germany), and liberal (Canada, New Zealand, and the United States).

Only one case of health insurance scores above .5 for social-based health insurance: USASOC. Social provisions of health insurance for Belgium and New Zealand are fuzzy, but so is the individual approach to health insurance for Germany. This result suggests that, across these Western capitalist countries, we rarely find social health insurance provision. When we take a close look, one country's individual provision is more similar to social provision found in other countries.

Three cases score above .5 for individual-based health insurance: the individual programs of Finland, Ireland, and the United Kingdom. As noted, the welfare states of the United Kingdom and Ireland roughly fit their classification into Esping-Andersen's three worlds (50, 54). The fuzzy-set analyses suggest that the

Table 3

Minimum for *public* set membership

Plan	Case no.	Source		Management		Stimulus		Eligibility		Minimum
AULPUB	1	St*I	.75	St	1	St	1	St	1	.75
AULIND	2	I*So	0	I*So*St	.75	I	0	I*So	0	0
AUSPUB	3	M*St*So*I	.5	So*St	.75	St	1	M*So*I	0	0
AUSIND	4	I*St	.75	I*St	.75	I*St	.75	I*So	0	0
AUSOCP	5	M*St	.5	M*St	.5	M*St	.5	M	0	0
BELPUB	6	M*St*So*I	.5	M*St*So	.5	St	1	M*So*I	0	0
BELSOC	7	So*I*St	.75	So*St	.75	So*St	.75	So	0	0
CANPUB	8	St*I*M	.5	St	1	St	1	St	1	.5
CANOCP	9	M*St	.5	M*St	.5	M*St	.5	M*So	0	0
CANIND	10	I	0	I*St	.75	I	0	I*So	0	0
DENPUB	11	I*St	.75	St	1	St	1	St	1	.75
DENIND	12	I	0	I*St	.75	I	0	I*So	0	0
FINPUB	13	M*St*I	.5	St	1	M*St	.5	St	1	.5
FINOCP	14	M*St	.5	M*St	.5	M*St	.5	M*So	0	0
FININD	15	I	0	I*St	.75	I	0	I	0	0
FRGPUB	16	M*St*I*So	.5	M*St*I	.5	St*So	.75	M*St*I*So	.5	.5
FRGOCP	17	M*St	.5	M*St	.5	M	0	M*So	0	0
FRGIND	18	I*So*St	.75	I*So*St	.75	I*So*St	.75	I*So	0	0
IREPUB	19	St*I	.75	St	1	St	1	St	1	.75
IREIND	20	St*I	.75	St*I	.75	St*I	.75	So*I	0	0

JPNPUB	21	M*St*I*So	.5	St	1	St	1	St	1	.5
JPNPUB	22	M*St*I*So	.5	St	1	St	1	M*So	0	0
JPNIND	23	I	0	I*St	.75	I	0	I*So	0	0
NETPUB	24	St*I*So	.75	St	1	St	1	St	1	.75
NETIND	25	I	0	I*St	.75	I	0	I*So	0	0
NORPUB	26	St*I	.75	St	1	St	1	St	1	.75
NZLPUB	27	St*I	.75	St	1	St	1	St	1	.75
NZLSOC	28	I*So	0	I*So*St	.75	I*So	0	I*So	0	0
NZLOCP	29	M	0	M*St	.5	M	0	M	0	0
SWEPUB	30	M*St*I	.5	St	1	St	1	St	1	.5
SWEOCP	31	M*St*I	.5	M*St	.5	M	0	M*So	0	0
SWEIND	32	I	0	I*St	.75	I	0	I*So	0	0
UKMPUB	33	St*I*M	.5	St	1	St	1	St	1	.5
UKMOCP	34	M	.5	St*M	.5	M	0	M*So	0	0
UKMIND	35	I	0	St*I	.75	I	0	I	0	0
USA Medicare	36	M*I*St	.5	St	1	St*I	.75	M*St*So	.5	.5
USA Medicaid	37	St	1	St	1	St	1	St	1	1
USAOCP	38	M	0	M*St	.5	M*St	.5	M*So	0	0
USASOC	39	So*St	.75	So*St	.75	So*St	.75	So	0	0
USAIND	40	I*St	.75	I*St	.75	I*St	.75	I*So	0	0

Table 4

Minimum for *market* set membership

Plan	Case no.	Source		Management		Stimulus		Eligibility		Minimum
AULPUB	1	St*I	.0	St	0	St	0	St	0	0
AULIND	2	I*So	0	I*So*St	0	I	0	I*So	0	0
AUSPUB	3	M*St*So*I	.5	So*St	0	St	0	M*So*I	.75	0
AUSIND	4	I*St	0	I*St	0	I*St	0	I*So	0	0
AUSOCP	5	M*St	.5	M*St	.5	M*St	.5	M	1	.5
BELPUB	6	M*St*So*I	.5	M*St*So	.5	St	0	M*So*I	.75	0
BELSOC	7	So*I*St	0	So*St	0	So*St	0	So	0	0
CANPUB	8	St*I*M	.5	St	0	St	0	St	0	0
CANOCP	9	M*St	.5	M*St	.5	M*St	.5	M*So	.75	.5
CANIND	10	I	0	I*St	0	I	0	I*So	0	0
DENPUB	11	I*St	0	St	0	St	0	St	0	0
DENIND	12	I	0	I*St	0	I	0	I*So	0	0
FINPUB	13	M*St*I	.5	St	0	M*St	.5	St	0	0
FINOCP	14	M*St	.5	M*St	.5	M*St	.5	M*So	.75	.5
FININD	15	I	0	I*St	0	I	0	I	0	0
FRGPUB	16	M*St*I*So	.5	M*St*I	.5	St*So	0	M*St*I*So	.5	0
FRGOCP	17	M*St	.5	M*St	.5	M	1	M*So	.75	.5
FRGIND	18	I*So*St	0	I*So*St	0	I*So*St	0	I*So	0	0
IREPUB	19	St*I	0	St	0	St	0	St	0	0
IREIND	20	St*I	0	St*I	0	St*I	0	So*I	0	0

[illegible]	21	M*St*I*So	.5	St	0	St	0	St	0	0
JPNPUB	22	M*St*I*So	.5	St	0	St	0	M*So	.75	0
JPNIND	23	I	0	I*St	0	I	0	I*So	0	0
NETPUB	24	St*I*So	0	St	0	St	0	St	0	0
NETIND	25	I	0	I*St	0	I	0	I*So	0	0
NORPUB	26	St*I	0	St	0	St	0	St	0	0
NZLPUB	27	St*I	0	St	0	St	0	St	0	0
NZLSOC	28	I*So	0	I*So*St	0	I*So	0	I*So	0	0
NZLOCP	29	M	1	M*St	.5	M	1	M	1	.5
SWEPUB	30	M*St*I	.5	St	0	St	0	St	0	0
SWEOCP	31	M*St*I	.5	M*St	.5	M	1	M*So	.75	.5
SWEIND	32	I	0	I*St	0	I	0	I*So	0	0
UKMPUB	33	St*I*M	.5	St	0	St	0	St	0	0
UKMOCP	34	M	1	St*M	.5	M	1	M*So	.75	.5
UKMIND	35	I	0	St*I	0	I	0	I	0	0
USA Medicare	36	M*I*St	.5	St	0	St*I	0	M*St*So	.5	0
USA Medicaid	37	St	0	St	0	St	0	St	0	0
USAOCP	38	M	1	M*St	.5	M*St	.5	M*So	.75	.5
USASOC	39	So*St	0	So*St	0	So*St	0	So	0	0
USAIND	40	I*St	0	I*St	0	I*St	0	I*So	0	0

Table 5

Minimum for *social* set membership

Plan	Case no.	Source		Management		Stimulus		Eligibility		Minimum
AULPUB	1	St*I	0	St	0	St	0	St	0	0
AULIND	2	I*So	.5	I*So*St	.5	I	0	I*So	.5	0
AUSPUB	3	M*St*So*I	.5	So*St	.75	St	0	M*So*I	.5	0
AUSIND	4	I*St	0	I*St	0	I*St	0	I*So	.5	0
AUSOCP	5	M*St	0	M*St	0	M*St	0	M	0	0
BELPUB	6	M*St*So*I	.5	M*St*So	.75	St	0	M*So*I	.5	0
BELSOC	7	So*I*St	.5	So*St	.75	So*St	.75	So	1	.5
CANPUB	8	St*I*M	0	St	0	St	0	St	0	0
CANOCP	9	M*St	0	M*St	0	M*St	0	M*So	.75	0
CANIND	10	I	0	I*St	0	I	0	I*So	.5	0
DENPUB	11	I*St	0	St	0	St	0	St	0	0
DENIND	12	I	0	I*St	0	I	0	I*So	.5	0
FINPUB	13	M*St*I	0	St	0	M*St	0	St	0	0
FINOCP	14	M*St	0	M*St	0	M*St	0	M*So	.75	0
FININD	15	I	0	I*St	0	I	0	I	0	0
FRGPUB	16	M*St*I*So	.5	M*St*I	0	St*So	.75	M*St*I*So	.5	0
FRGOCP	17	M*St	0	M*St	0	M	0	M*So	.75	0
FRGIND	18	I*So*St	.5	I*So*St	.5	I*So*St	.5	I*So	.5	.5
IREPUB	19	St*I	0	St	0	St	0	St	0	0
IREIND	20	St*I	0	St*I	0	St*I	0	So*I	.5	0

JPNPUB	21	M*St*I*So	.5	St	0	St	0	St	0	0
JPNPUB	22	M*St*I*So	.5	St	0	St	0	M*So	.75	0
JPNIND	23	I	0	I*St	0	I	0	I*So	.5	0
NETPUB	24	St*I*So	.5	St	0	St	0	St	0	0
NETIND	25	I	0	I*St	0	I	0	I*So	.5	0
NORPUB	26	St*I	0	St	0	St	0	St	0	0
NZLPUB	27	St*I	0	St	0	St	0	St	0	0
NZLSOC	28	I*So	.5	I*So*St	.5	I*So	.5	I*So	.5	.5
NZLOCP	29	M	0	M*St	0	M	0	M	0	0
SWEPUB	30	M*St*I	0	St	0	St	0	St	0	0
SWEOCP	31	M*St*I	0	M*St	0	M	0	M*So	.75	0
SWEIND	32	I	0	I*St	0	I	0	I*So	.5	0
UKMPUB	33	St*I*M	0	St	0	St	0	St	0	0
UKMOCP	34	M	0	St*M	0	M	0	M*So	.75	0
UKMIND	35	I	0	St*I	0	I	0	I	0	0
USA Medicare	36	M*I*St	0	St	0	St*I	0	M*St*So	.75	0
USA Medicaid	37	St	0	St	0	St	0	St	0	0
USAOCP	38	M	0	M*St	0	M*St	0	M*So	.75	0
USASOC	39	So*St	.75	So*St	.75	So*St	.75	So	1	.75
USAIND	40	I*St	0	I*St	0	I*St	0	I*So	.5	0

Table 6

Minimum for *individual* set membership

Plan	Case no.	Source		Management		Stimulus		Eligibility		Minimum
AULPUB	1	St*I	.75	St	0	St	0	St	0	0
AULIND	2	I*So	.5	I*So*St	.5	I	1	I*So	.5	.5
AUSPUB	3	M*St*So*I	.5	So*St	0	St	0	M*So*I	.5	0
AUSIND	4	I*St	.75	I*St	.75	I*St	.75	I*So	.5	.5
AUSOCP	5	M*St	0	M*St	0	M*St	0	M	0	0
BELPUB	6	M*St*So*I	.5	M*St*So	0	St	0	M*So*I	.5	0
BELSOC	7	So*I*St	.5	So*St	0	So*St	0	So	0	0
CANPUB	8	St*I*M	.75	St	0	St	0	St	0	0
CANOCP	9	M*St	0	M*St	0	M*St	0	M*So	0	0
CANIND	10	I	1	I*St	.75	I	1	I*So	.5	.5
DENPUB	11	I*St	.75	St	0	St	0	St	0	0
DENIND	12	I	1	I*St	.75	I	1	I*So	.5	.5
FINPUB	13	M*St*I	.75	St	0	M*St	0	St	0	0
FINOCP	14	M*St	0	M*St	0	M*St	0	M*So	0	0
FININD	15	I	.75	I*St	.75	I	1	I	1	.75
FRGPUB	16	M*St*I*So	.5	M*St*I	.75	St*So	0	M*St*I*So	.5	0
FRGOCP	17	M*St	0	M*St	0	M	0	M*So	0	0
FRGIND	18	I*So*St	.5	I*So*St	.5	I*So*St	.5	I*So	.5	.5
IREPUB	19	St*I	.75	St	0	St	0	St	0	0
IREIND	20	St*I	.75	St*I	.75	St*I	.75	So*I	.5	.75

JPNPUB	21	M*St*I*So	0	St	0	St	0	St	0	0
JPNPUB	22	M*St*I*So	0	St	0	St	0	M*So	0	0
JPNIND	23	I	1	I*St	.75	I	1	I*So	.5	.5
NETPUB	24	St*I*So	.5	St	0	St	0	St	0	0
NETIND	25	I	1	I*St	.75	I	1	I*So	.5	.5
NORPUB	26	St*I	.75	St	0	St	0	St	0	0
NZLPUB	27	St*I	.75	St	0	St	0	St	0	0
NZLSOC	28	I*So	.5	I*So*St	.5	I*So	.5	I*So	.5	.5
NZLOCP	29	M	0	M*St	0	M	0	M	0	0
SWEPUB	30	M*St*I	.75	St	0	St	0	St	0	0
SWEOCP	31	M*St*I	.75	M*St	0	M	0	M*So	0	0
SWEIND	32	I	1	I*St	.75	I	1	I*So	.5	.5
UKMPUB	33	St*I*M	.75	St	0	St	0	St	0	0
UKMOCP	34	M	0	St*M	0	M	0	M*So	0	0
UKMIND	35	I	1	St*I	.75	I	1	I	1	.75
USA Medicare	36	M*I*St	.75	St	0	St*I	.75	M*St*So	0	0
USA Medicaid	37	St	0	St	0	St	0	St	0	0
USAOCP	38	M	0	M*St	0	M*St	0	M*So	0	0
USASOC	39	So*St	0	So*St	0	So*St	0	So	0	0
USAIND	40	I*St	.75	I*St	.75	I*St	.75	I*So	.5	.5

Table 7
Overview of public, market, social, and individual set membership

Plan	Case no.	Public minimum	Market minimum	Social minimum	Individual minimum
AULPUB	1	.75	0	0	0
AULIND	2	0	0	0	.5
AUSPUB	3	0	0	0	0
AUSIND	4	0	0	0	.5
AUSOCP	5	0	.5	0	0
BELPUB	6	0	0	0	0
BELSOC	7	0	0	.5	0
CANPUB	8	.5	0	0	0
CANOCP	9	0	.5	0	0
CANIND	10	0	0	0	.5
DENPUB	11	.75	0	0	0
DENIND	12	0	0	0	.5
FINPUB	13	.5	0	0	0
FINOCP	14	0	.5	0	0
FININD	15	0	0	0	.75
FRGPUB	16	.5	0	0	0
FRGOCP	17	0	.5	0	0
FRGIND	18	0	0	.5	.5
IREPUB	19	.75	0	0	0
IREIND	20	0	0	0	.75
JPNPUB	21	.5	0	0	0
JPNPUB	22	0	0	0	0
JPNIND	23	0	0	0	.5
NETPUB	24	.75	0	0	0
NETIND	25	0	0	0	.5
NORPUB	26	.75	0	0	0
NZLPUB	27	.75	0	0	0
NZLSOC	28	0	0	.5	.5
NZLOCP	29	0	.5	0	0
SWEPUB	30	.5	0	0	0
SWEOCP	31	0	.5	0	0
SWEIND	32	0	0	0	.5
UKMPUB	33	.5	0	0	0
UKMOCP	34	0	.5	0	0
UKMIND	35	0	0	0	.75
USA Medicare	36	.5	0	0	0
USA Medicaid	37	1	0	0	0
USAOCP	38	0	.5	0	0
USASOC	39	0	0	.75	0
USAIND	40	0	0	0	.5

individual health insurance plans of Ireland and the United Kingdom share an individual orientation. The other programs characterized as individual, including Australia, Austria, Canada, Denmark, Germany, Japan, the Netherlands, Sweden, and the United States, are only fuzzy members of the individual set. For all these individual approaches, the social and state sectors also participate in the provision of health insurance. On the basis of these results, individual health insurance is rarely individual, but typically the state is involved and for some the social sector participates in individual provision of health insurance.

DISCUSSION AND CONCLUSION

The results indicate that few health insurance programs are purely public. Some programs characterized as public are primarily based in the public sector, including the public programs for Australia, Denmark, Finland, the Netherlands, Norway, and New Zealand. Other programs described as public are only fuzzy members of the public sector. Austria's public program does not belong to the public sector.

The fuzzy-set approach indicates that, among the 40 cases of health insurance provision studied, no case is purely market, social, or individual. Fuzzy membership is the greatest extent to which any case of health insurance belongs to the market sector. Although we do not have an ideal case of individual-based health insurance, three cases are more than fuzzy members of the individual sector: Finland, Ireland, and the United Kingdom.

Not only does the public-private dichotomy fail to capture the complexity of health insurance provision, it can mislead. The results indicate that social democratic and liberal welfare states, often considered to stand at opposite poles, seem to share public approaches to health insurance provision. The "private" sectors have only modest roles in health insurance provision. Stepping beyond the private label, the results suggest that the market sector has a fairly small responsibility compared with the individual sector.

This study has argued that social scientists should rethink the public-private dichotomy for health insurance provision; the examined cases of health insurance suggest that such a dichotomy is not useful for characterizing health insurance. As the fuzzy-set approach indicates, rarely is health insurance provision public or private. These findings suggest that analyses of social policies and explanations for variations in social policies may gloss over important differences in policy designs. Not only is the private label too broad, but programs characterized as public may be dissimilar. Debates over the public-to-private shift in social policy may overlook important differences in how countries provide health care. Scholars and policy analysts can determine alternative routes by which countries could provide access to health insurance and mitigate inequality in provision of health insurance. Rethinking the public-private dichotomy for health insurance could provide important avenues for future research.

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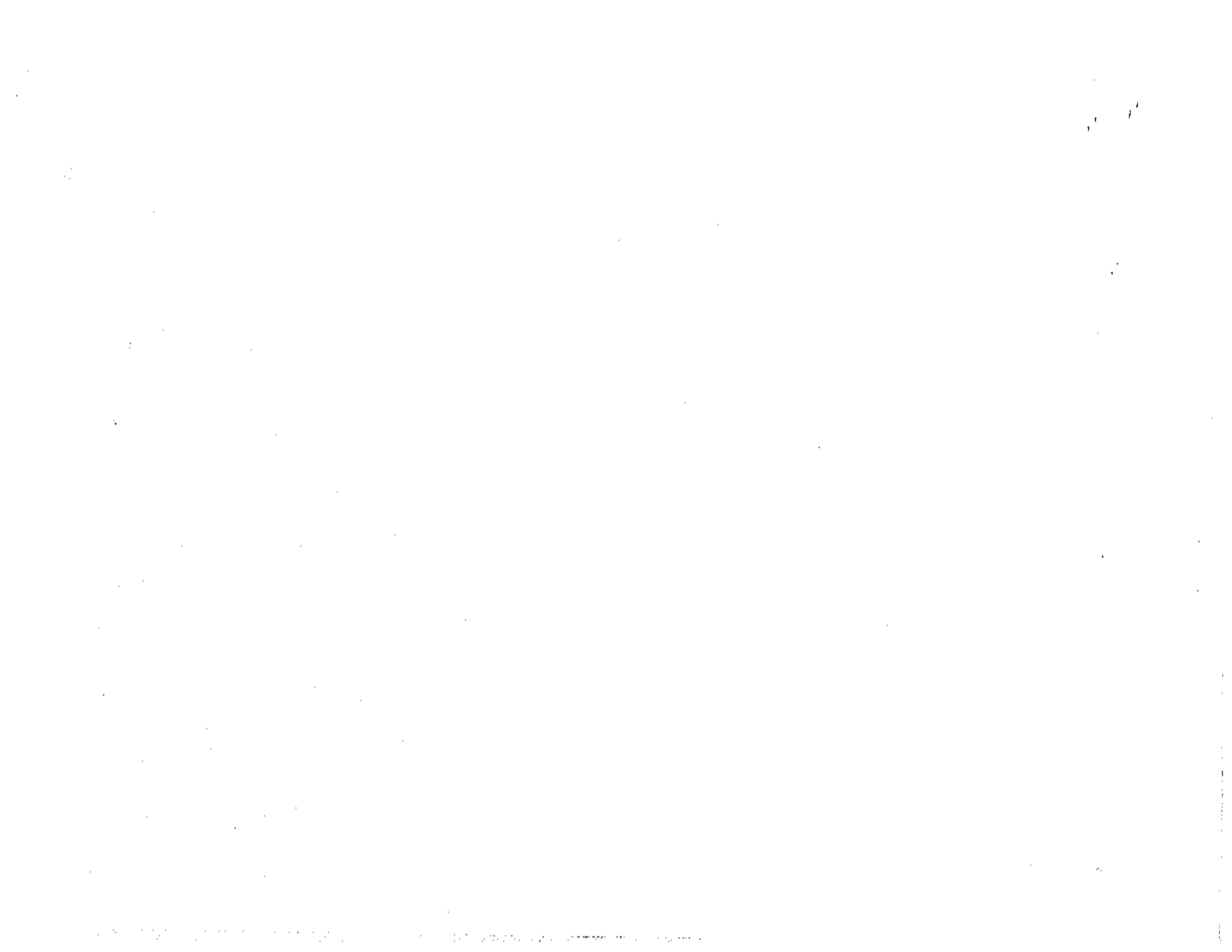

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