

AGE AS AN INSURANCE RATE CLASS VARIABLE

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EXECUTIVE SUMMARY

PART ONE: INSURANCE

The insurance mechanism is nothing more than a formal process that allows widely divergent policyholders to “pool” their collective risk. This allows people to substitute a known premium for an unknown and highly variable potential loss (e.g. the loss of one’s house in a fire). However, all claims must ultimately be paid by policyholders’ premiums. Except for some small amounts of investment income, premiums are the only source of funding within the insurance process. In fact, total premium income must equal total claims paid plus an amount to cover the cost of administration of the process.

Because insurance benefits are highly similar across insurance companies, insurers compete for customers based mostly on price. Thus, there is a strong pressure to achieve the lowest possible premium for each potential policyholder so long as the premium at least covers the “expected” loss costs.

Risk Classification allows insurers to subdivide policyholders into groups that bring close to identical risks to the insurance pool. Each policyholder in a defined risk class will pay the same premium, which is a direct function of their risk profile. Equal risks are treated equally, but unequal risks are treated unequally. This is referred to as “actuarial equity.” All pricing must be done on “expected” costs since premiums are set at the beginning of the policy exposure period before actual claims are known.

Many Canadians now view the ability to drive a car as a social “right”. Thus, the denial of this “right”, because one’s premium is prohibitively high, is viewed as an affront to an accepted human right. Legislators then may respond by removing the use of Risk Classification Variables such as age and sex to “solve” this problem. However, if the Risk Classification Variables do truly measure the risk being brought to the insurance pool, then the result is inevitably cross-subsidisation whereby safe drivers pay a higher premium than before to subsidize the rates of poorer drivers who can no longer be identified. There is statistical evidence that such cross-subsidisation does exist in the three provinces that use mostly government-monopoly auto insurance and which do not use age and gender as Risk Classification Variables.

There are five principles of Risk Classification. The system should:

- reflect expected cost differences
- distinguish among risks on the basis of relevant cost-related factors
- be applied objectively
- be practical and cost-effective
- be acceptable to the public

One reason for the wide use of “age” as a Risk Classification Variable is that it satisfies all of these criteria. In particular, age and sex are used as rating criteria because they provide a relatively costless statistical measure of expected loss costs. It may not be possible to prove a “cause-and-effect” relationship between the Risk Classification Variable and ultimate costs. This is not an actuarial requirement.

While the “age” of the driver cannot be proven to be the cause of accidents, there is strong statistical evidence that age and automobile loss costs are correlated. Not only that, there

appears to be no perfect proxy or substitute for age as a Risk Classification Variable (e.g. years licensed).

PART TWO: THE ETHICS OF USING AGE AS AN INSURANCE RATING VARIABLE

Moral or ethical theory does not offer a singular approach to assessing whether it is ethical to use age as an insurance Rating Variable. The conclusions reached will depend on the analytical approach that is adopted. To that end, it is useful to understand the primary philosophical approaches that are available to use.

Utilitarianism assesses the ethical value of an action by the extent of the utilities, interpreted as pleasure, which result from actions or rules. Actions or rules that lead to the greatest amount of this variable are considered morally superior. A difficulty of Utilitarian reasoning is that it is unable to account for, or accommodate, individual rights. Efficiency theory is a variant that focuses on identifying and achieving efficient states of being. A pareto optimal state is one where no one can be made better without making someone worse off. A pareto improvement is said to occur when it is possible to take an action, or change a system, that makes at least one individual better off, without making anyone else worse off. Both of these approaches are results focused.

Deontology is an analytical approach that removes the focus on outcomes and places it on identifying and valuing certain intrinsically good qualities. The difficulty with deontology flows from trying to identify these intrinsically good qualities or values. Rights arguments are often employed to argue that age differentiation is unjustified. Rights theories claim, in principle, that

everyone has the same fundamental rights. Concepts of liberty, freedom, security, equality and egalitarianism all have relevance to a rights oriented discussion. What distinguishes the various approaches within rights theory is how rights are defined and, inevitably, the critical relationship between potentially conflicting rights. A discussion of rights or harms only can proceed in a coherent manner if there is an understanding of the underlying substantive value or values upon which the theory is based. The values underlying rights have been proposed to be based on benefits, interest, and choice.

Choice theory also provides useful analytical insight in the context of using age as an insurance Rating Variable. The theory asserts that what is important in understanding the idea of rights is not the value of the interest that is protected since this is in dispute, but who has the power to choose what happens. The theory tries to separate itself from having to judge whose interest ought to trump in a situation of conflict, and looks rather at who has the choice or control over what happens. In this context, a reasonable evaluation of interests, including those of drivers, insurers, and other societal stakeholders can take place.

The concept of discrimination has typically had negative connotations. It is true that some drivers are negatively impacted by age-based differentiation in insurance rates. However, the alternative which involves removing age as a variable, is not without its own harm. People who pose less of a risk will be forced to pay more and the overall costs of the system would increase. Further, the concept of actuarial equity can be argued to be ethical using theoretical approaches grounded in utilitarianism, equality and egalitarianism.

Most Canadians now view the ability to drive as a social “right”. Insurance requirements that are prohibitive to the exercise of that “right” are, as a result, viewed as unethical. However, a thorough exploration of the issue suggests that there is a strong ethical argument for requiring

vehicle insurance. Further, governments should not be ethically obliged to assist individuals when the requirement of insurance proves too prohibitive for an individual to be able to drive. There must be a limit on “rights” claims that can be made to challenge every negative impact. Governments should not assume they are ethically obliged to intervene. Although they may choose to, and have done so in certain jurisdictions, there is not any overriding ethical imperative to do so. This is not to say that ethical arguments could not be provided for making such a decision. However, those who choose not to are not without a moral foundation either.

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PART ONE: INSURANCE

I. The Insurance

A. Introduction

It is of extreme importance that the reader understands the basis of the insurance mechanism.

Insurance is a service not a product.

The origins of insurance can be found in collective societies that date from the earliest of times. One can see an analogy today in the Mennonite Community. Many Mennonites do not carry insurance from commercial carriers on their farm buildings and livestock. If a Mennonite barn burns down, the surrounding community gathers together and builds a new structure and supplies the unfortunate farmer with new livestock. In this direct manner, the Mennonite Community removes the risk of loss from the individual farmer and spreads this risk over the collective community.

Insurance is really no different except that there exists a commercial enterprise—the Insurance Company—which acts as the formal administrator of this collective process. There is very little difference between what a commercial insurance policy achieves and what the Mennonite Community achieves. The key to the insurance mechanism is the removal of risk which would have to be carried by a specific individual and the spreading of that risk to a collective group of policyholders.

One of the key reasons that this basic point needs to be understood is that any claims that are paid by an Insurance Company must ultimately be paid out of premiums collected from

policyholders. The Insurance Company does not manufacture money. The only funds it has beyond premiums and investment income earned thereon is a small amount of owner's equity that is allocated to designated surplus that can be available as required for unforeseen emergencies. No insurance company can continue in business for any length of time unless premium income is at least as large as claims paid. In fact, total premium income must equal total claims paid plus cover the cost of administering the process. This, in turn, means that if one policyholder's premiums are decreased, another policyholder's premiums must be increased (all else being equal).

Further the premium that the "average" policyholder pays must actually exceed the expected value (again one might view this as an "average" value) of his or her claims. The excess must exist to pay for the cost of administration of the process. Given this absolute reality, why would a person buy insurance?

B. Purpose of Insurance

The theoretical answer is that the average policyholder is risk averse. This in turn leads to another theoretical explanation for the purchase of insurance (where not legally mandated) which is "the decreasing marginal utility of money".

For most people, the utility value of one's early units of income buy "more valuable" goods and services than later units. For example, a person with a small income would use most of that income to buy food, clothing and shelter, which have very high utility. However, if someone has very high income, the last unit of income might be used to purchase one's fiftieth golf game of the year or a seventh television. These purchases have very low utility.

A person who does not buy insurance faces the risk of losing assets of high value through unforeseen events. For example, one's two hundred thousand dollar house may burn down. For another example, an individual might be sued by a person they injure in an automobile accident. The final payment could easily be for millions of dollars. Without insurance, this individual would have to pay for these losses out of personal wealth. This would wipe out not only your last dollars of wealth (with relatively low utility) but could also wipe out your early dollars of wealth (with relatively high utility).

Instead of facing this risk (defined as "variance of economic outcome") one can instead pay a premium to an insurance company and be assured that in case of loss, the insurance mechanism will make the policyholder whole (just like the Mennonite Collective).

The premium paid will come out of one's last dollars of wealth which have (relatively) low utility. However, by buying insurance, one protects one's early dollars of wealth which have (relatively) high utility. The utility value of the premium paid will thus be less than the utility value of the protection granted, even though the premium must exceed the expected value of loss so as to pay for the administration of the insuring process.

The insurance industry is highly competitive. Consumers have a long list of potential insurance companies with whom they can deal and the coverage within the policy (certainly for auto insurance) is very much the same from company to company (like a commodity). So price is clearly of primary importance. Finally, except where coverage is mandated, the consumer has the ultimate option of not buying insurance.

The result of this competitive environment is that every insurance company works hard to charge a premium that will attract policyholders. Because of the similarity of insurance

protection, a large part of attracting new customers (and retaining them) is through low premiums. Thus, most pricing programs attempt to charge each potential policyholder the lowest premium possible. This price will be the expected “cost” that the policyholder brings to the insurance pool plus enough of a margin to continue to run the business. This template is meant to apply to each and every potential policyholder. Thus, the insurance pricing mechanism attempts to calculate as accurately as possible the true expected “cost” for each potential policyholder as an individual. The result is a system of cost-based insurance with a minimum of cross-subsidisation.

This is where Risk Classification enters the process.

C. Risk Classification

If the pricing actuary is convinced that there are characteristics of the potential policyholder that can be used to more accurately predict the expected cost they brought to the insurance pool, those characteristics will be used to create risk classes. Each risk class will pay a different premium, but that premium will always be the actuary’s expected cost that the policyholder brings to the risk pool.

This placing of persons into Risk Classes based on certain characteristics is clearly a form of discrimination. However, actuaries would view this as positive discrimination in that the actuary is observing differences accurately or making distinctions that have a statistical basis. Equal risks are treated equally, but unequal risks are treated unequally. That is referred to as actuarial equity. Further, the classification variables used are not arbitrary but are based on statistically significant correlations to experience period loss costs. Young women pay lower premiums than young men because they bring lower costs to the pool. If these costs were to rise, so

would the premiums. If, because of graduated licensing, claims from all young drivers fall, then so too will premiums.

Placing an individual policyholder into a Risk Class which is a group of homogeneous policyholders, and pricing based on group characteristics has been challenged twice under the Human Rights Code (Zurich v. Ontario Human Rights Commission and Bates and Watters (Alberta Human rights Commission) v. Co-operators General Insurance Company). In both instances, the practice of grouping risks into Risk Classes was upheld by the Courts (see Brown, 1995).

For automobile insurance, historic variables that have been used to define Risk Classes have included: Territory (where is the car's home base), Automobile use (business, commute, pleasure), Gender of the policyholder, Car Code (factors reflecting the value of the car, but also costs of repair, the probability of theft and other factors), and Driving Record. Age has also been an important Rating Variable but normally only up to age 25. Once a driver reaches age 25 the insurer expects to have more information in the "Driving Record" variable and age is no longer needed to establish rates. Historically, Marital Status was also used as a Rating Variable prior to age 25, with married drivers getting lower rates than unmarried. However, some governments have prohibited the use of this variable.

Finally, one must remember that the insurance price (premium) is set at the beginning of the policy exposure period—before anyone can know what the actual cost outcome will be. Thus, all values are determined based on "expectation". There is another important aspect of the fact that pricing is a priori. An insurance company cannot "recoup" its losses from an existing policyholder who has a history of large claims. If that were attempted, the policyholder need only approach a company with which s/he has no history and that company will charge them no

more than their “expected” future costs. Having said that, one of the important variables in the pricing of auto insurance is “Driving Record” and a poor claims history will result in a policyholder paying a higher premium for auto insurance. However, this is not because the insurance company is attempting to recoup past losses, but purely because there exists a statistical correlation between past claims and future costs. That is, there is a statistical correlation between people who have a large number of claims to date and the number of claims they are expected to have in the future. All pricing is *a priori*. Past claim costs cannot be recouped in a free and competitive marketplace. Thus, a classification system should be judged *ex ante* when risks are being assessed, not *ex post*.

D. Objectives of Ratemaking

To close this section, the following Objectives of Ratemaking, taken from the textbook “Introduction to Ratemaking and Loss Reserving for Property and Casualty Insurance (Brown and Gottlieb, 2001, 50/51) give an important overview of the pricing process:

Objectives of Ratemaking

Cover Expected Losses and Expenses

Obviously for the insurer to stay in business, income must at least equal outgo. Income includes premium and investment income, and outgo includes all losses, the expenses associated with those losses, all sales expenses (for example, commissions), premium taxes, and all expenses of running the head office and any branch offices. Each cohort of policyholders should pay for its expected costs. There should not be any “intergenerational” subsidies, nor should there be any subsidies among risk classes. That is, each risk class should pay a premium commensurate with the risk that it contributes to the insurance pool. This requires the pricing actuary to estimate the costs that will be incurred within the risk class through the payment of the last claim dollar, which may not occur for many years. It is possible for management to decide to sell some products below cost. If this decision is made, then the expected loss from such a marketing decision should come from the owner’s equity (surplus) account and not from any other group of policyholders.

Produce Rates That Make Adequate Provision for Contingencies

Not only must the actuary price for the expected, but there should also be a provision in the rates for the unexpected (for example, the 100-year flood). This is not an easy matter, however. Property/casualty insurance is extremely competitive with dozens of insurers vying for consumers' dollars. Further, in many lines, the consumer has the ultimate prerogative to self-insure. So, if rates are too high, the insurer will lose business, and normally its best business, to the competition or to self-insurance. However, if rates are too low, the insurer will lose money and be forced to reduce surplus to cover the deficiency. This, in turn, reduces the opportunity to expand the number of policies underwritten in the future, since surplus is needed to support the writing of new business. Inadequate rates also make senior management, shareholders, and, ultimately, regulators very unhappy since they endanger the insurer's solvency.

Encourage Loss Control

A well-designed Risk Classification process will provide strong economic incentives for the policyholder to reduce loss costs by reducing claim frequency, or loss severity, or both. Examples of methods used to encourage loss control are good driver discounts in auto insurance, discounts for sprinkler systems and burglar alarms in homeowners and commercial property insurance, discounts for accident prevention and rehabilitation programs in workers compensation, and so on. Encouraging loss control not only allows the insurer to offer lower rates, it also provides an important service to society by reducing accidents, and the injuries and property damage that ensue. Hence, there is a very real social value to this aspect of the ratemaking process.

Satisfy Rate Regulators

Nearly all states and provinces have insurance laws and departments or agencies that regulate, or at least review, insurance rates for lines such as automobile insurance. In general terms, the basic requirements of the regulatory agencies are that rates must be adequate, not excessive, and not *unfairly* discriminatory.

Most agencies will ask the actuary to support a proposed rate change with full actuarial documentation. Many agencies employ staff and/or consulting actuaries to review rate filings. There may also be a public hearing at which the actuary must appear to defend the proposal under cross examination by lawyers representing the regulatory agency and possibly insurance consumer groups.

The agency will usually criticize and even refuse methods that appear to be subjective and/or capricious. Thus the actuary is well advised to use generally accepted actuarial techniques in the analysis.

The actuary must also be prepared to defend methods that are widely accepted in the actuarial community, but may appear to be socially unacceptable. Examples include the classification of risks using variables such as age, gender, and marital status. There may also be a desire on the part of the regulatory agency, especially if its head is elected, to make rates "affordable". Not only

must the rating methodology be actuarially defensible, but the actuary must have the ability to convince a lay audience of that fact. (Brown and Gottlieb, 2001, 50/51)

II. Social Versus Personal Risk

In Canada, the ability to drive a car is a virtual necessity for working adults. Once you own a car, third-party liability insurance is compulsory. These two, once connected, may mean that automobile insurance has become, from a practical viewpoint, a form of social insurance as opposed to a method of dealing with personal risk. There is a demand to make it generally available at a reasonable price to all who are legally allowed to drive. In short, there is a political ceiling to what an insurer can charge for automobile insurance.

There have also been problems in many jurisdictions with a growing percentage of drivers driving without insurance, or “going bare”. Obviously, this is contradictory to good public policy and governments have searched for methods of minimizing this reality.

There are many instances where a risk has shifted over time from a Personal Risk to a Social Risk.

Prior to the late 1890's, workplace accident injuries were considered a personal risk. Injured workers either had to purchase personal insurance or successfully sue their employer once injured. Since the turn of the 20th century, however, Workers Compensation systems have been adopted throughout the industrialized world with the majority of systems (the United States being a notable exception) being government administered.

Similar comments can be made about unemployment and medical care. In Canada and Europe these risks are now seen as social risks and the government provides systems to protect those who incur losses.

Three provinces in Canada also have government-operated automobile insurance monopolies: British Columbia, Saskatchewan and Manitoba. Because of their monopoly positions, these insurance schemes do not have to compete on premium rates with other insurers. Thus, it is possible to have rates that do not include Rating Variables such as gender or age without the threat of losing customers and cash flow. In short, it is possible to do a more broadly-based averaging in setting rates even though that may result in some cross-subsidies among policyholders. That is, one would expect a private-sector insurer to work harder to define more risk classes and more premium cells than would exist within a government monopoly. This, however, results in some drivers paying more and some less for insurance than they would in a government-run system. Those paying more tend to be younger and older drivers and male drivers.

Of course, it is possible for governments to force a more broad-based Risk Classification System without nationalising the insurance industry. All that is needed is the passage of legislation to prohibit the use of the debated variable. This will result in the private sector companies seeking substitutes for the prohibited variables.

This has happened in some provinces with the variable, “marital status”. It has also been widely debated with respect to gender (although gender remains as a Rating Variable in the seven free-enterprise provinces), and now with respect to age.

III. Principles of Risk Classification

In the late 1980's the Canadian Institute of Actuaries put into place a document entitled: Risk Classification—Statement of Principles (identical to a 1980 paper of the same name adopted by the American Academy of Actuaries). This Section summarizes the key points in this document having an impact on the issue of Age as a Rating Variable.

The overarching principles of Risk Classification are five:

- The system should reflect expected cost differences.
- The system should distinguish among risks on the basis of relevant cost-related factors.
- The system should be applied objectively.
- The system should be practical and cost-effective.
- The system should be acceptable to the public.

One important purpose of Risk Classification is to avoid Anti-selection. Anti-selection is defined as: "The actions of individuals, acting for themselves or for others, who are motivated directly or indirectly to take financial advantage of the risk classification system". In the insurance mechanism, there is asymmetry of information. The policyholder knows more about him/herself than does the insurance company. This can create a motivation to take financial advantage of the system to achieve a lower premium than is fair. Anti-selection can also take place if the risk class is too broad. Policyholders at the upper end of the risk spectrum allowed in the defined class will tend to buy more insurance than those at the lower end of the risk spectrum within the defined class.

To the extent possible, insurers attempt to use Risk Classification Variables that are easily ascertainable and easily verifiable. Age is one such variable. Driving patterns, while they might be useful in predicting exposure to risk, are an example of a potential risk classification variable that is extremely difficult to determine *a priori* (policyholders are placed in a defined risk class at the beginning of the policy year before their actual experience is known) and is not used.

In the private insurance sector, within any class of insureds, there must be a strong relationship in the long-term between the value or cost of benefits that group receives and the amounts paid into the program by that class. This is essential.

Property-casualty rates are determined by observing the loss experience of groups of insureds over a (relatively) short period of time. Calculating unique expected loss costs for any one individual alone is impossible. Each risk group contains individuals with similar risk characteristics and is referred to as a risk class. In a competitive marketplace and in a line of business with as many claims per year as in auto insurance, risk classes will become more narrowly and clearly defined over time (so long as the cost of the sharper classification system is not larger than the economic value of the underwriting gains that result). If a company finds a new variable that assists in setting more accurate rates, that variable will lead to more successful marketing and loss experience which will normally result in higher profits for the instigating company. Clearly, private insurers have substantial incentives to devise new classification systems that will attract low risk customers. This will happen automatically in an open market. Other companies will then mimic the new classification practices in a very short period of time.

Differences in prices among classes should reflect differences in expected costs with no intended redistribution or subsidy among the classes. Each individual risk placed in a defined

class should have an expected cost which is substantially the same as that for any other member of the same class. This is denoted by actuaries as statistical homogeneity. As previously stated, risk classification takes place at the beginning of the policy period. While “expected” costs at the beginning of the year are meant to be homogeneous in any risk class, the members of that class will have actual costs that can be as varied as the number of members in the class by the end of the policy period. As an example, it would come as no surprise that at the end of the year many members of a “high risk” class would have lower actual costs than many members of a “low risk” class.

In a free market, insurers are motivated to become more refined in their Risk Classification Systems so as to have a more-highly focused pricing structure, which, in turn, should attract a higher market share. However, the Risk Classification System has to be efficient. The additional expense of obtaining more refinement should not be greater than the reduction in expected costs for the refined Risk Classification System. Thus, there is a practical limit to the incentive to add refinements to the Classification System. This also means that “easily-measured” or “easily-verified” characteristics may be used in favour of variables that are more costly to verify. For example, “miles driven” would be an excellent measure of “exposure to risk”, but is seldom used because of the cost of verification. This increased cost of verification would ultimately be passed on to the consumers of insurance. In summary, age and sex are used as rating criteria because they provide a relatively costless statistical measure of expected loss costs.

To the extent possible, one attempts to define risk classes with clear and objective criteria. Age is a good example of a variable that fits this description. Defining a life insurance risk class for “fit” people would be an example of a criterion that is not clearly defined and should not be used. A classification for “blindness” is not objective, whereas a classification of “vision corrected to no

better than 20/100" is objective. Under the same principle, any individual should belong to one and only one risk class. That is, the classes should be collectively exhaustive and mutually exclusive.

The Risk Classification System should minimize the ability of the policyholder to manipulate or misrepresent a risk characteristic so as to affect the class to which it is assigned.

The variables used for classification should be susceptible to convenient and reliable measurement. Age, sex, occupation and geographic location are examples of factors that are generally reliably determinable. Moral character, driving patterns and psychological characteristics are examples of factors that are not so readily determinable.

Risk Classification Systems can be designed to provide incentive for insureds to act to reduce expected losses and thus operate to reduce the overall costs of insurance in total (for example, reduced rates for apartment buildings with sprinkler systems). Age is not a variable that drives this principle.

Any Risk Classification System must recognize the values of the society in which it is to operate. Historically, auto insurance defined some risk classes based on marital status. In particular, young married drivers paid less than young unmarried drivers. The use of marital status as a Risk Classification Variable is no longer permitted in some provinces. Several jurisdictions are now debating the use of "age" as a Risk Classification Variable.

The public tends to be more accepting of risk classes if they can see a "cause and effect" relationship between the Risk Class Variable and the expected costs. However, in insurance it is often impossible to prove statistically any postulated "cause and effect" relationship. There

are strong elements of randomness and luck in a driver's accident experiences and to rely on causality (and controllability) as dominant rating concepts overlooks this fact. That is, causality cannot be made a requirement for a Risk Classification System. The next section of the paper discusses this in more detail.

Similarly, it is not necessary that the policyholder has any "control" over the variable. An example of a "controllable" variable would be "smoking" in the rating of life insurance. An example of a "non-controllable" variable would be "age" as a Rating Variable.

In a related document, the American Academy of Actuaries established an Actuarial Standard of Practice (Actuarial Standards Board, 1989) for actuaries designing, using and updating Risk Classification Systems. This document is completely consistent with the Risk Classification: Statement of Principles, but we highlight the following:

Certain basic principles should be present in any sound Risk Classification System:

1. The system should reflect cost and experience differences on the basis of relevant risk characteristics (there should be no cross-classification subsidies).
2. The system should be applied objectively and consistently.
3. The system should be practical, cost-effective, and responsive to change.
4. The system should minimize anti-selection.

The data on which Risk Classes are defined and prices set, does not have to be insurance company data. Data from other sources, if relevant, can be used by the actuary (this is clearly the case for a new risk such as HIV in the 1980's). Some inferences may not need statistical evidence (those with seriously impaired vision represent a high risk as operators of motor vehicles).

As stated, it may not be possible to prove a “cause and effect” relationship between the risk classification variable and ultimate costs. This is not a requirement of the Actuarial Standard. For example, living in a river valley would not by itself cause a flood insurance claim, but it does bear a reasonable relationship to the hazard insured against, and, thus, would be a reasonable Risk Classification Variable. Being in the hospital is not viewed as a cause of death, but it is usually impossible to apply for life insurance coverage if you are presently in a hospital for acute care.

More on the topic of “cause and effect” can be found in Vass (2004). In his article: “Cause and Effect in Ratemaking” Vass makes several pertinent remarks. Many auto insurance Risk Classification Systems now use variables that have no obvious “cause and effect” relationship. Two notable examples are people who are rated because they use cell phones in their cars and policyholders with a poor credit history. Both variables can be shown to be positively correlated with higher accident frequency/severity, but it would be difficult in either case to show a direct causal relationship. Credit history is also being used as a Risk Classification Variable in Homeowners Insurance (Daw, 2004). In this article, Daw quotes actuary James Monaghan who states that: “there is clear evidence of a strong correlation between credit history and future loss performance”. Most jurisdictions in Canada prohibit the use of credit history as a Rating Variable in auto insurance, however it is being used in the United States (where allowed) for auto insurance and in Canada by several companies for Homeowner’s insurance. (As an aside, companies report that there is a strong correlation between a poor credit history and higher auto claims costs.)

Another important aspect in Risk Classification is the subject of actuarial equity versus social equality. Insurance contracts are generally subject to the sections of the provincial human rights codes prohibiting denial of services customarily available to the public or contracts offered to the

public on the basis of the prohibited grounds for discrimination (for example, age, sex, religion). Some provinces specifically exempt insurance contracts from the discrimination provisions of their human rights codes, within limits. For example, the Ontario Human Rights Code provides for limited exemptions “on reasonable and *bona fide* grounds because of age, sex, marital status, family status, or handicap”. What is reasonable and *bona fide* obviously becomes the issue. In this regard, it is important to note that the Federal Charter of Rights and Freedoms does not apply to private contracts or transactions. However, provincial government regulation of the insurance industry and the gathering of data for provincial automobile statistical plans could be subject to the Charter of Rights and Freedoms (the Charter applies to the Parliament and government(s) of Canada and matters on which they have legislative authority).

Actuaries would argue that Risk Classification is not contrary to the Charter of Rights and Freedoms. Risk Classification discriminates, but does so positively (it observes relevant differences accurately and then makes appropriate distinctions in pricing). The insurance mechanism does not attempt to treat people equally (policyholders are not all charged an equal premium) but equitably (policyholders are charged a premium that is a direct function of the expected loss costs they bring to the insurance pool). As a 1982 IBC submission stated:

Human rights should mean that everyone can enter a restaurant and get service. It should not mean that everyone has to order the same meal, nor pay the same price.

Through the process of Risk Classification, equal risks (*a priori*) are treated equally, but unequal risks are treated unequally.

In a 1982 paper commissioned by the IBC, Rea and Trebilcock came to the following conclusions with respect to Risk Classification criteria:

“A. Efficiency Arguments

It might be argued on efficiency grounds that a more individualized set of Rating Variables should be employed which individual drivers are in a position to react to in their driving behaviour. This would create an efficient set of incentives for drivers to minimize accident risks. There are several deficiencies in this argument. First, it ignores the efficiency gains associated with charging higher rates to clearly identifiable classes of high risk drivers such as young men. Second, the current system already includes variables such as convictions, claims experience and type of automobile, that are to some extent, under the control of the individual. Third, substitute variables such as mileage driven, like age, sex and marital status, are also highly imperfectly correlated with expected losses. Fourth, developing finer rating discriminators involves significant evaluation and monitoring costs that must be weighed against the efficiency losses from less individualized Rating Variables. In a competitive industry, as the automobile insurance industry in Ontario is, firms face strong incentives to search out low risk drivers where this is feasible. There is no reason to suppose that firms in this industry have not carried this process to the point where the costs involved in finer discrimination amongst risks exceed any benefits associated therewith.

B. Distributive Arguments

It might be argued on distributive (affordability) grounds that certain classes of drivers for example, under 25-year-old males, face excessively burdensome costs of owning and operating an automobile under the existing rating structure and that steps should be taken to make insurance more affordable by these classes, even if this involves a departure from the principle of setting rates to reflect the underlying risks presented by these classes.

This argument is flawed in several respects. First, it is not clear why subsidization of automobile insurance purchased by under 25 year old male drivers, rather than any of their other consumption expenditures, merits special consideration. Second, it is not clear why other classes of drivers should be called upon to finance this subsidy, especially when this implicit “tax” may often be regressive. Third, a policy of subsidization will be difficult to operationalize without either detailed price regulation of the entire automobile insurance industry or a substantial growth in the residual market.

C. Ethical Arguments

It might be argued that use of sex, age and marital status infringe ethical imperatives that stress individual autonomy and the desirability of permitting individuals to fashion their own life circumstances as free as possible from external or non-self-imposed constraints. Sex, age and marital status are factors over which individuals have little or no control compared to various alternative Rating Variables which the individual is in a position to control and take responsibility for.

This argument is weak, except perhaps in the case of sex where it might be argued that discrimination in automobile insurance rates on the basis of sex reinforces undesirable class stereotypes about the role of women in the household and in the work-force. However, abandoning sex as a Rating Variable, without substituting some other variable, such as mileage driven (which is likely to be very costly to monitor), will have the effect of increasing automobile insurance rates paid by young women. Thus, the benefits to women associated with such a change are likely to be largely symbolic and personally costly.

Discrimination based on age and, to a lesser extent, marital status is used throughout our legal system. For example, youths are restricted in their right to drive, vote, own a gun, enter military service etc. Distinctions based on age and marital status seem to imply no generally socially offensive class stereotypes. Youth in particular is a “disability” that every member of the community suffers in the course of his or her lifetime, is strongly correlated with expected accident costs, and cannot easily be replaced by any low-cost or accurate substitute Rating Variable.” (Rea and Trebilcock, 1982, 1-4).

IV. Use of Age as a Risk Classification Variable in Automobile Insurance

Canada has thirteen models for the delivery of automobile insurance—ten provinces plus three territories. While each jurisdiction is different, there is one major division in the delivery of insurance. Three provinces, British Columbia, Saskatchewan and Manitoba provide insurance through a monopoly government sponsored insurance mechanism (although all three allow private competition for non-compulsory coverages). At this moment, the other ten jurisdictions offer “free market” delivery of insurance but under varying degrees of regulation.

Competitive Risk Classification is not necessary in a monopoly delivery model. Poorer risk classes can be charged rates below the expected cost they bring to the insurance pool and be subsidised by better risk classes who pay more in premiums than the risk they bring to the pool. These cross subsidies can and do exist in a monopoly system. They cannot exist for long (at least not in theory) in an open competitive marketplace.

Statistical evidence of the impact of such cross-subsidisation in the “public” insurance systems does exist. Papers by Mullins (2003a, 2004) indicate that both accident frequency and accident severity (on a per capita basis) are higher in the “public” insurance jurisdictions. This is consistent with what risk classification principles would predict. If poorer drivers are charged less than the cost of the risk they bring to the insurance pool, then more of them will buy insurance or they will buy more insurance than if they paid the true actuarial expected cost. With more of these higher risks in the pool, one would expect accident frequency and severity to rise. This is what the statistics indicate.

Mullins (2003b) examines twenty-six possible factors that could explain the differences in accident frequency and severity between public and private jurisdictions and concludes that social risk pricing—where good drivers subsidize the premiums of bad drivers—is the key reason for more collisions. Mullins (*ibid*) states: “The public systems are proud to say that they do not discriminate by age or gender—everyone pays the same insurance premium. When premiums are too low for high-risk drivers, too many of them drive and cause more collisions”.

Two papers (Gaudry, 1986 and Devlin, 1988) found that the introduction in Quebec of no-fault insurance on a flat-premium basis, in 1978, resulted in the number of reported accidents increasing markedly. This is partly because of the removal of at-fault coverage, but is also the result of the removal of age and sex in rate setting which resulted in an increased number of high-risk drivers on the road.

The IBC (2003) reports that they conducted a literature review of 30 papers published in peer-reviewed journals over the past several decades on the implications of underwriting restrictions for consumers. The research was unanimous in finding that restrictions on risk classification

result in cross-subsidisation and more high-risk drivers on the road. One might ask what the justification is in “taxing” low risk drivers to subsidise high-risk drivers.

The same IBC report (*ibid*) notes that only six states in the United States have underwriting restrictions on age and gender. In Europe five countries decided to ban the use of gender and age as underwriting criteria in the 1990s, but today only two of these countries (Finland and Luxemburg) remain on that list. The European Union debated the removal of age and sex as insurance Rating Variables at a meeting on June 1, 2004. Of the 25 EU nations in attendance, 17 voted against a proposal to prohibit age and sex as Rating Variables. These included the UK, France, Germany, Italy, and Spain.

Rea and Trebilcock also (1982, 89) conclude:

“The ethical case against employing age, sex and marital status as rating discriminators seems strongest in the case of sex, less strong in the case of marital status, and very weak in the case of age (which applies uniformly to everyone over a life-time).”

In a private marketplace, cross-subsidisation can have other, unintended, impacts. Private insurers will not want to issue policies where they expect to lose money. They may attempt to avoid doing business with drivers who bring more expected costs to the insurance pool than the premiums they pay. This may result in problems of availability of coverage. Similarly, insurers may underwrite all subsidised drivers into the High Risk pool commonly called the Facility Association. This will result in higher losses within the high-risk pool. These losses, in turn, are paid for *pro rata* to total provincial premium income by the private insurance companies. The final result of this chain of events is higher premiums for all drivers in the long run, and a continued subsidisation of the high-risk drivers.

Leadbetter *et al.* (2003) report that IBC data showed that higher levels of rate regulation are also associated with greater volatility in premiums (after controlling for other key variables).

None of the three government monopolies use “age” as a Rating Variable. Again, this does not threaten these systems since they are able to create price structures that allow for cross-class subsidies.

Two provinces have debated moving to the government-sponsored monopoly recently; Nova Scotia and New Brunswick (although it would appear that this will not occur in either jurisdiction in the foreseeable future).

However, Nova Scotia has passed legislation banning the use of “age” as a Rating Variable and New Brunswick (as of Fall 2004) has legislation pending that would ban the use of “age” as a Rating Variable. Alberta has now created a grid of premiums for auto insurance and has stated that any rate manual that does not exceed the model grid of premiums is deemed approved and can be used as filed. However, the model premium grid does not use “age” or “sex” as Rating Variables. Thus, if a company intends to continue to use “age” as one variable in the setting of rates, it could find that the resulting rates for its poorer risks (for example, young drivers) will be capped at the model grid premium. This will result in a forced cross-class subsidy of rates as poorer risks (as measured by age) will have their premiums capped by the model premium.

Other provinces (for example, British Columbia) are debating whether or not they will allow the insurance industry to collect data where “age” is an element in the subdivision of the experience. If “age” becomes a banned variable in the collection of experience data, then in a very short period of time, it becomes impossible to price using an “age” variable since there will be no data on which to base the pricing model.

Arguments in favour of banning the collection of data using age as a defined subdivision (and sex and marital status) are sometimes based on principles of privacy rights. "Age" is deemed to be a matter of personal privacy and some legislation would prohibit the collecting of data where the age of the individual is a collection variable.

Is there statistical evidence that "age" and automobile loss costs are correlated? The answer is an overwhelming "yes". The following references all find a strong correlation between age and automobile loss costs: Insurance Institute for Highway Safety (2001 and 2003), Matheson (1999), Laing (2003) and Towers Perrin (2001). Further the IBC in its annual Green Book publication (Automobile Insurance Experience) publishes a Driver Vehicle Classification Exhibit (AU25, Exhibit I and II) which shows a breakdown of Claims Costs by age. This shows a strong correlation between age and historic loss costs.

Further, several of the largest P&C companies surveyed by the authors of this report indicate that their in-company data analysis finds that there is no perfect proxy for age. Age is more highly correlated with loss costs than any of the alternatives experimented with to date.

Lyman *et al.* (2002) found driver crash involvement rates *per capita* decreased with age, but that fatal involvement rates *per capita* increased starting at age 70. The same pattern existed for involvement rates per licensed driver. For both all crashes and fatal crashes, involvement rates per mile driven increased appreciably at age 70.

The Insurance Institute for Highway Safety (2003) found that while seniors do not have an increased tendency to get into crashes, their fragility means that they experience elevated death rates per mile driven. However, at age 75, older drivers do begin to be markedly more involved in crashes. In 2001-2002, per mile driven, drivers 75 years and older had higher rates of fatal

motor vehicle crashes than drivers in other age groups except teenagers. Fatal crash rates in 2002 began to rise at age 75, and rise sharply at age 85 and above.

Graphs showing automobile loss costs plotted against age show a “U”-shaped curve (or perhaps an inverted “J”). That is, loss costs are high at the young ages, and fall gradually but consistently until around age 30. These costs then remain relatively flat until about age 75 when they again rise for elderly drivers. These results are highly consistent across the studies reviewed (see Braver and Trempe, 2004). To keep the increased risk of the very elderly in perspective, however, we note the comments of Braver and Trempe (2004):

“..it is important to recognize that younger drivers, both teenagers and people in their 20s, represent a substantially greater public health problem than older drivers for both fatal and non-fatal motor vehicle injuries. With the exception of driver death rates among drivers 75 and older, teenage drivers posed the highest risks of death and non-fatal injury to themselves, their passengers, occupants of other passenger vehicles, and non-occupants. Risks declined among drivers in their 20s, but were significantly greater compared with 30-59 year olds. “

A typical pricing pattern for insurers in a free market jurisdiction in Canada is to charge higher premiums (based on an age Rating Variable) for those aged 16 to 25; to use Driving Records for mature drivers often offering a “mature-driver” discount to drivers between ages 30 and 65 and then to remove the “mature-driver” discount at around age 65.

In the five Canadian provinces that operate in an open/competitive market (i.e. excluding British Columbia, Saskatchewan, Manitoba, Alberta and Nova Scotia), “age” is used in the pricing models of all companies surveyed. In Nova Scotia, where “age” cannot be used, the most common proxy used by the insurance industry for pricing is “Years Licensed”. “Years Licensed” appears to be a logical proxy for age for young and inexperienced drivers, but has several problems associated with it.

First, it will not account for the rise in loss costs among elderly drivers who will have many “Years Licensed”. Second, it does not account for the situation where a driver is “new” in the jurisdiction of exposure, but may have had many “Years Licensed” in another jurisdiction that cannot be counted or is in a database that is not available to the insurer (for example, a new immigrant to Nova Scotia). This is a relatively small problem in Nova Scotia because immigration is low, but would be a significant problem in Ontario. Third, some people simply get their driver’s licenses at an advanced age. This would also be the case if one spouse in a couple qualifies to drive at an advanced age. If “age” is not allowed as a Rating Variable, then these older mature drivers will pay premiums more appropriate to younger inexperienced drivers. Several studies have shown that mature individuals do not have the same driving experience as young drivers. Two primary reasons are listed for the difference: young drivers are more apt to drive at risky times (for example, late at night), and young drivers are more apt to drive while under the influence of drugs/alcohol (both attributes are more common among young males).

Anecdotally, insurers note that one class of drivers hit hard by the new legislation in Nova Scotia is that of spouses (normally wives) who become licensed at mature ages. These drivers historically would have been added to the principal policy at very low or no extra cost. Now, however, with both age and marital status prohibited from use, the premium increases are significant.

The Traffic Injury Research Foundation (TIRF) of Ottawa has literally dozens of studies and publications looking at the increased risk amongst young drivers. The bibliography lists a small number of relevant references.¹ Several of these studies specifically attempt to disentangle the

¹ Others can be found at: www.trafficinjuryresearch.com/publications/

effects of age and experience. The TIRF has found that experience (as measured by Years Licensed) and age are independently related to “per-driver” collision rates. For example, if you examine the “per-driver” crash rates of beginning drivers of different ages, the highest collision rates are among young beginners—those who are 16 to 19 years of age (see Mayhew/Simpson, 1990; Simpson/Mayhew, 1992; and Mayhew/Simpson/Pak, 2003).

Anecdotally, among the actuaries surveyed, the common view expressed was that the insurance industry did not object strenuously to the prohibition of “age” as a Rating Variable in Nova Scotia and New Brunswick (pending) since they feared that the alternative would be “nationalisation” of the industry.

The Traffic Injury Research Foundation (2003) has also shown that in provinces which legislated graduated licensing, both claim frequency and claim severity among young drivers has gone down. This in turn will lead to lower premiums for young drivers than would have been the case had graduated licensing not been introduced.

V. The Use of “Age” as a Rating Variable Across Canada

This section of the paper quickly reviews the use of “age” as a Rating Variable in the ten provinces of Canada.

British Columbia: Mandatory coverage (Third Party Liability, Accident Benefits and Uninsured Motorist Coverage) in British Columbia can only be purchased from the government monopoly

Insurance Corporation of British Columbia (ICBC). ICBC does not use age (or sex or marital status) as a Rating Variable. Nor does it use “Years Licensed”. Instead it uses only a “Driving Record” Rating Variable. ICBC also writes over 90% of the non-mandatory coverage. The government is attempting to encourage more private sector involvement in these coverages, but with little effect to date. At the same time, the B.C. government is holding hearings through the Privacy Commissioner of B.C. to look at whether or not insurance companies should be prohibited from collecting data where “age” is a survey variable (they will also investigate sex and marital status). This is being investigated under the umbrella of privacy legislation. However, if the insurance industry is prohibited from collecting data using “age” as a variable, then, in a very short time, it will be impossible to classify and price drivers using that variable. ICBC has not collected data that can be broken down by age, sex or marital status.

Alberta: Alberta is still a free market province for auto insurance. However, Alberta now requires that auto rates used in the province cannot exceed a grid of acceptable rates produced by the province. The grid of acceptable rates does not use “age” as a Rating Variable. Thus, for companies who would intend to price with an “age” variable, it is highly predictable that some of the resulting price cells (for example, young drivers) will exceed the grid rates. In these instances, the company’s rates must be capped by the grid rate. If the company’s pricing analysis is correct then this implies a subsidisation of rates (young drivers being undercharged and mature drivers being overcharged).

Saskatchewan: Compulsory Auto Insurance in Saskatchewan can only be purchased from the government monopoly Saskatchewan Government Insurance (SGI) although private competition is allowed for non-compulsory coverage. Interestingly enough, the SGI sells insurance in other jurisdictions than just Saskatchewan, as a private sector competitor. SGI uses only two Rating Variables: a “Safe Driving Index” and “Car Code”. There are no variations

in rates within Saskatchewan for variables such as age, sex, marital status. Further, there is no variation in rates between rating territories or even between urban and rural areas of the province. As has been pointed out, one would expect this to result in cross subsidisation (for example, urban territories will be subsidised by rural territories). However, as previously stated, such cross subsidy is possible in a government monopoly system.

The “Safe Driver Index” represents the number of years of no claims. New drivers enter at a neutral index (neither a discount nor a surcharge) and then move “up or down” depending on their accident record. Each step in the index represents either a rise or fall in rates of 6% from the adjacent cell.

Manitoba: Similar to Saskatchewan, Manitoba drivers buy their auto insurance from a government monopoly, the Manitoba Public Insurance Company (MPIC). MPIC does not use an “age” variable in its pricing. However, it still collects data subdivided by age. Premium costs decrease 5% per year that is claims free, to a maximum discount of 25%. Thus, first-year drivers pay more than those with five years of claims-free experience. Immigrants to Manitoba can use their past Driving Record if they can get a transcript of their experience that is acceptable to MPIC. There is no surcharge for the elderly. There also exists an accident surcharge in one’s license fee (but not in the insurance premium). Manitoba allows private sector competition to the extent that the policyholder might like to purchase a higher liability limit or a lower deductible than covered in the government standard policy.

Ontario: It is interesting to note that Ontario came very close to prohibiting gender as a Rating Variable in 1989, but removed the legislation at the last moment, seemingly because of negative reaction from young female drivers who faced large rate increases.

Ontario remains a free-market jurisdiction and administers a single threshold no-fault insurance system. It still allows for the use of “age and sex” (and marital status). There is no indication of any move to prohibit the use of “age or sex”. Recent reforms have centred on allowing drivers to drop some coverage (for example, Disability Income) if they have equivalent coverage within another insurance policy.

Quebec: The automobile insurance system in Quebec has two main parts. First, bodily injury is covered by a public plan administered by the Société de l'Assurance Automobile du Québec (SAAQ). “Premiums” for the SAAQ portion of the insurance are paid as part of the license fee in Quebec. There is no differentiation for age, sex or marital status in this fee. Damage to property, collision and comprehensive are covered by private insurers in a normal free market. For the private coverages, there is no indication of any move to prohibit the use of “age or sex” in the auto insurance pricing system.

Prince Edward Island: This is another free-market jurisdiction with no indication of any move to prohibit the use of “age or sex” as a pricing variable.

New Brunswick: New Brunswick has a proposal pending that would prohibit the use of “age” as a Rating Variable effective January 1, 2005. However, there are still members of the insurance industry who believe that this may not occur. Apparently, much of the pressure for the prohibition of “age” as a Rating Variable in New Brunswick came from seniors who felt that they were being charged too much. There was then a public inquiry that led to a recommendation that the auto insurance industry be “nationalised”. While that did not happen, the private sector companies have not aggressively opposed the prohibition of “age” as a Rating Variable since they felt that the alternative might be “nationalisation” of the industry.

Nova Scotia: As noted, Nova Scotia prohibits the use of “age” as a Rating Variable for auto insurance effective November 1, 2004. It also prohibits the use of “marital status”. It still allows the use of sex, but this matter is under active consideration.

In submissions to the Province of Nova Scotia, work done by Barb Addie (FCIA) for the IBC indicated the following impacts should be expected to result following the removal of “age” and “age and sex”:

- Removal of age only will cause significant dislocation for newer but older drivers with principal operators older than 25 years of age but licensed less than 6 years seeing increases of 38.9%, while the less experienced drivers under the age of 25 will see decreases of 17.4%.
- Removal of age and gender will cause significant dislocation (if insurers agree to write risks that are likely under-rated). Overall, male principal operators will see a 2.7% decrease, while female principal operators will pay 3.7% more. Males represent 56% of all principal operators while females represent 44%. For principal operators licensed more than 6 years, the males will see a decrease of 2.1% while females increase 2.7%. For newly licensed principal operators, males will see a decrease of 15.1% while females see an increase of 26.6%. The differences are similar when data for the four Atlantic provinces are combined. Analysis for the Province of New Brunswick produced virtually identical results.
- Removal of age and gender will have the greatest impact on older (over 25) newly licensed drivers with their average premiums increasing by 30 to 60%.

Newfoundland: In spite of wide government reforms of auto insurance in Newfoundland, insurers are still allowed to use “age” as a rating factor.

The Territories: Several years ago, the government of the Yukon Territories tried to eliminate age and gender from rate setting, but abandoned the attempt. “Age” is still a permitted Rating Variable in the three Territories. There is no indication of any pending legislation that would change this.

In summary, in private sector jurisdictions other than Alberta and Nova Scotia, insurers do use “age” as a Rating Variable, but (normally) only up to age 25. After age 25, the policyholder’s Driving Record is the Rating Variable of choice. Many insurers also provide a “mature driver discount” for drivers between ages 30 and 65. The fact that this discount is normally discontinued at or around age 65 means that elderly drivers pay a slightly higher premium than younger drivers (i.e. those aged 30 to 65).

VI. Proxies for Age in Automobile Insurance

It has been the position of this paper that the use of age as a Rating Variable in Automobile Insurance is actuarially justified. As has been stated, young drivers are over-represented in the statistics for serious automobile crashes and that, as a result, the effect of disallowing age as a rating factor will be significant price dislocations. In its Nova Scotia submission, IBC predicted that inexperienced drivers under 25 years of age would see premium reductions of 17% on average, while inexperienced drivers over age 25 would see their premiums rise 39% on average.

These misallocations would be exacerbated if gender were also banned as a Rating Variable. IBC has estimated the removal of age and gender would mean that a young female driver would see her premiums rise 26.6%, while the premiums charged to male principal drivers with the same experience would fall by 15.1%.

Nova Scotia has prohibited the use of age and marital status as risk factors. It is considering the prohibition of gender. However, use of a risk factor that reflects driving experience (for example, Years Licensed) is not considered a contravention of the “age” prohibition.

With the Nova Scotia legislation effective date of November 1, 2004, several companies have filed new rates which do not use “age” as a Rating Variable. Gender is still used. Some of these companies have just dropped “age” as a variable and have filed with the remaining variables from their previous analysis. Several companies have moved to relatively new models for ratemaking. In many of these, rates are now based on a combination of Years Licensed (some use Years of Driving Experience) and Years Claims Free (a two-way grid). One company even reported a favourable attitude to the new Nova Scotia model and is considering it for voluntary adoption in other jurisdictions once claim data have been analyzed under the new system.

VII. Issues Re: Age as a Rating Variable in Life Insurance, Health Insurance and Annuities

The general principles of choosing and using a Rating Variable listed above apply equally as well to Life Insurance, Health Insurance and Annuities as they do to Property/Casualty coverage.

For both Life Insurance and Annuities, the pricing actuary is primarily interested in the variable of “time to death”. Study after study has shown that the primary indicator of “time to death” is the age of the person being reviewed. As Geoff Rowe, Senior Advisor at Statistics Canada and author of several mortality analyses stated (in a personal communication):

“Ageing (senescence) is a biologically irreducible determinant of mortality; other factors (smoking, etc.) accelerate aging, but biological ageing is always there.”

Several notable papers come to the same conclusion (see Kirkwood and Holliday, 1979). The authors of this report also have reviewed a lengthy list of “Theories of Mortality” and have found

no model or formula for mortality that is not based on age as the primary variable (see Brown, 1988b).

However, there are other variables that have an impact on “time to death”. They are reviewed nicely in a recent paper by Brown and McDaid (2003). This paper reviews 45 papers that in turn look at a series of factors that affect “time to death”. These factors include (in alphabetical order): age, alcohol consumption, education, gender, health behaviors (for example, exercise), income, marital status, obesity, occupation, race/ethnicity, religion, and smoking habits.

Many of these variables are already used in the pricing of Life Insurance. Even in the pricing of Annuities, Canadian actuaries use gender along with age in setting prices. In the UK where annuitization of retirement income at age 75 is now mandatory, many of the above variables are now being used in the pricing of annuities (along with postal codes). However, it is clear from the literature that none of these variables can be used as a substitute for “age”. The “age” variable remains independently primary in modeling “time to death”.

In personal communications with the Canadian Life and Health Insurance Association, there is no activity at this time to suggest that “age” might be prohibited as a Rating Variable for Life Insurance, Health Insurance or Annuities.

Health care premiums are also aged-based. As with Life Insurance, age is the primary variable in the pricing of health insurance. There is a clear and statistically significant correlation between age and expected health care costs. As Barer *et al.* (1995) point out, in Canada, people aged 65 and over made up 11.7 % of the population in 1991/92 and 4.75 % of the population were 75 and over. However, those 65 and over accounted for nearly 60 % of hospital inpatient days, and 40 % of all days were attributed to those 75 and over.

Some pressure on the use of age as a Rating Variable for Health Insurance may come from seniors who wish to purchase out-of-country Health Insurance so they can spend winter outside of Canada. The elderly now find that paying for out-of-country Health Insurance can become their single largest expense at advanced ages (beyond 80). This is not a problem within Canada because the majority of health care costs are covered by government health insurance. It is also not as serious a problem for U.S. citizens in the United States, since they are eligible (at age 65) for both Medicare and Medicaid (although there are sizeable costs in the form of coinsurance and deductibles). Canadians are not eligible for US Medicare/Medicaid and most provincial health plans have only minimal coverage for out-of country medical expenses.

Were “age” to be prohibited as a Rating Variable for Life Insurance, Health Insurance or Annuities, then the other Rating Variables listed previously would take on a higher level of use. However, we repeat the fact that “age” is independently the primary variable in the modeling of “time to death” and the use of these other variables would be an imperfect proxy.

In summary, it is the conclusion of the authors of this report that the prohibition of the use of “age” to price Life Insurance, Health Insurance and Annuities is not imminent and would meet with strong opposition from the Canadian Life and Health Insurance industry.

The authors of this report were also asked to comment on the issue of mandatory retirement.

We believe that any impact because of the abolition of mandatory retirement will be minor. In its 1987 report, the Ontario Task Force on Mandatory Retirement suggested that the abolition of mandatory retirement would increase labour force participation rates by less than ½%. It must be remembered that the vast majority of workers retire well before age 65, and the age used for mandatory retirement is normally age 65. In fact, we believe that the only industry that may feel

a measurable impact of the removal of mandatory retirement would be the university community (see Ashenfelter and Card, 2003).

Mandatory retirement in the public sector has been tested three times in the Supreme Court (*McKinney v. University of Guelph*, *Stoffman v. Vancouver General Hospital* and *Dickason v. University of Alberta*) and has been upheld in each instance based on Section 1 of the Charter (it was found to be reasonable and justifiable in the circumstances).

Most provincial human rights legislation permits discrimination on the basis of age where it is a reasonable and *bona fide* qualification because of the nature of the employment, the so-called *bona fide* occupational requirement or BFOR defense. Mandatory retirement would have to be defended under the BFOR criterion.

Shannon and Grierson (2004) agree that making mandatory retirement illegal would have little effect on the size of the older workforce. Evidence from the United States would lead one to believe that the abolition of mandatory retirement might have a measurable positive impact on labour force participation. However, by comparing changes in labour-force participation rates in Quebec and Manitoba (where mandatory retirement was abolished in 1983 and 1982, respectively) to provinces that still allow mandatory retirement, Shannon and Grierson found no statistically significant effect of the abolition of mandatory retirement. In fact, in many of the years studied, labour force participation rates in Quebec and Manitoba continued to fall (moreover, at a rate not significantly different than the provinces with mandatory retirement).

The authors also did “within province” analysis for Quebec and Manitoba, looking at shifts in employment rates over the period 1981 to 1996, but were not able to find conclusive evidence of a positive impact of the legislation.

The authors conclude that the abolishment of mandatory retirement has such a small impact because, in general, workers are retiring earlier and earlier so that any legislation that has an effect only after age 65 will have little effect.

PART TWO: THE ETHICS OF USING AGE AS AN INSURANCE RATING VARIABLE

I. Introduction

Underlying much of the above debate surrounding the use of age as a criterion for setting automobile insurance rates are questions of fairness. Specifically, is it morally “right” to distinguish between classes of users when setting insurance rates? Not surprisingly, there is already a body of literature in Canada that addresses this question. For example, Rea and Trebilcock (1982) examined ethical arguments for and against using the insured’s individual characteristics as a basis for risk classification and concluded that the case against employing discriminating factors is weakest for age, primarily since all persons face an equal probability of passing through each age classification in the course of a life time (see above). Others, and most notably, Wieggers (1989), examined Canadian automobile pricing mechanisms in terms of moral theory (as well as legal and actuarial theory), specifically addressing the trade off between assessing risk on an individual or group basis.

Moral or ethical theory does not offer a singular, accepted approach to analysis any more than do, say, theories of economics. The conclusions reached are inevitably a reflection of the approach adopted. For this reason, perhaps the most useful contribution this paper can make in relation to the ethical debate surrounding differential insurance rates is in providing an

examination of the best-known theoretical approaches. Well meaning readers will legitimately disagree based on their own prior assumptions, but it is essential that they understand the choices they have made along the way.

This section begins with a presentation of the primary ethical models that might be used in analyzing this question. These will lead to the identification of several specific theories that offer promise and from these, conclusions will be drawn as to the moral rightness of using age as a means of risk classification in this context.

II. Defining the Problem

It is useful to frame the discussion by identifying the primary question at the heart of this paper: Is there a social right to drive a motor vehicle? Such a question immediately calls for refinement: all developed societies have evolved rules that cite when a person may be "licensed" to drive and under what conditions. So, for example, there is a somewhat arbitrary rule that says no one below a certain age may drive on a public road and no driver may drive under certain conditions, such as alcohol impairment or blindness. For convenience – since it is not the role of this paper to consider the fairness of the existing constraints society has placed on the right to drive – the question should be restated in terms of licensed drivers; namely, "is there a social right for licensed drivers to drive a motor vehicle"?

This question leads to at least one other. The original question was asked out of concern that some existing policies (of insurers) may make driving for certain groups in society potentially prohibitively costly and thus prevent at least some members of those groups from driving. A

broader question then becomes whether there is a fundamental right for consumers across society to access goods and services based upon equal terms and conditions.

These two questions go to the heart of how society defines rights to social welfare or social goods. Taking the discussion to the level of the right to the individual “good”, theories of the “good” can be classified as either formal or substantive (Hausman and McPherson, 1996, 72-3). A *formal* economic theory, for example, might be that the good is just the object of a person’s preference. But what the “value” of the variable is – for example, pleasure -- will depend on a *substantive* idea of the good. A substantive theory helps define what one’s “good” *ought* to be. For example, Rawls believed that there can be an objective list of “primary social goods” that any good life would require (for example, education and income) (Rawls, 1971, 92). Of course, this suggestion in itself leads to further problems. Even if agreement can be reached on what primary social goods are, how are priorities determined between them?

If a driver is convicted of the criminal offence of driving under the influence of alcohol, how might the right of that driver, for example, to drive a vehicle in order to earn an income, be weighed against the rights of others to be protected against possible re-offence? Or, more pointedly, does the relative right of the young and potentially accident-prone driver to significantly lower rates outweigh the right of all other drivers to somewhat lower rates, and the freedom of insurers to assess risk as they so choose? This raises a further issue that again underlies the current debate. The troubling aspect of using age as a Rating Variable flows undoubtedly from the notion that insurers are, in some sense, discriminating between groups or classifications of persons. The word “discrimination” itself is heavily value laden and will be addressed later in this paper.

In order to provide insight into how these issues might be addressed from a moral theory perspective, the primary philosophical approaches are now summarized:

III. Primary Philosophical Approaches

A. Utilitarianism/Consequentialism

Perhaps one of the best-known approaches is that of “Utilitarianism” which is commonly expressed as seeking the “greatest good for the greatest number”. At a somewhat crude level, a policy would be perceived as being “good” if it maximizes the most good across all drivers.

Utilitarianism is a form of Consequentialist reasoning. A state of affairs is said to be good if it contains a certain quality or a quantity of some variable deemed intrinsically good. Utilitarianism says that utility interpreted as pleasure is what constitutes this variable and the Utilitarian says that actions or rules that lead to the greatest amount of this variable are ‘right’.

One of the obvious objections to such an approach is that it does not consider the individual seriously enough in terms either of rights or personal integrity (Kagan, 1998, 59-62). In the context of the present debate, the Utilitarian might justify the outcome of differential classes of insurance rates based on age in terms of the overall result of lower rates for the majority. But this approach ignores some difficult issues. What if the impact on those suffering higher rates is very severe? Is the overall effect averaged so that the consequence is that what is good on average is the optimal result? Or is it the totality of “goods” of the alternative choices that should be the goal? Further, how is utility measured between persons—is pleasure really qualitative or quantitative? How does a person really measure future costs and benefits for himself or others — this can lead to some very technical probability claims. In the context of a society that leans

ever more to avoiding differentiation on the basis of age, Utilitarianism will come into conflict with these values. This suggests that what is required is a theory that takes this into account, or can at least accommodate a concept of individual rights. This in turn requires consideration of the individual and her interests.

B. Efficiency Theory

An alternate theoretical approach is based on efficiency and welfare economics in particular (Hausman and McPherson, 1996, 84). Indeed, much of the debate presented in the first part of this paper finds its philosophical roots in this discourse. Efficiency is said to be *pareto* optimal; namely, a state of affairs in which no one can be made better off without making someone else worse off. A variant is a *pareto* improvement in which it is possible to change a system (make more efficient) by making at least one person better off without making anyone else worse off. Either approach is efficient.

If the concern is for preferences being satisfied, and the more preferences satisfied, the better, then John Broome's "principle of the personal good" provides one relevant theoretical approach; that is:

"..if two prospects are equally good for everyone, they are equally good, and if one of the two prospects is better for someone than the other and at least as good for everyone, then it is better." (Broome, 1989, 11)

Applying that principle to the above problem, assuming both insurance pricing choices allow drivers to continue to drive, and that it can be shown that maintaining differential rates as they exist in some provinces is better than the alternative of denying age as a discriminating factor since that would make an entire class of persons worse off, then this is the right allocation.

While this is a convenient statement of an approach, it isn't clear whether it takes the analysis very far. In the economists' view there can never be shortages of anything in a free market since the supply and demand will meet where they "ought" to meet. If the price of auto insurance for the elderly is set really high and they stop buying it, then there is still no shortage of the service even though many won't be able to drive.

The shortcomings of this approach are reasonably obvious. If values are just the objects of preferences, then can they not change relatively easily? But if there is something more to them, say something meaningful is lacking in one's life if they do not exist, then there remains the conceptual need to fill in some substantive idea of what ought to be valued. This is often the assertion of government regulators when they say they are providing a service that people need but wouldn't otherwise receive in the market (so called market failure). Returning to the limitations identified above of the Utilitarian theory, preference ideas of welfare and here efficiency were meant to improve upon the Hedonistic/ Utilitarian ones since the latter viewed all pleasure as measurable and capable of comparison. However, this did not mean that this was operating with ideas of equality of fairness so that pleasure ought necessarily be spread out among agents.

What Utilitarianism says is that the right action is to give the greatest amount of pleasure possible to society, but this may result, for example, in the distribution of the greatest amount (or even all) of candy to the child with the greatest sweet tooth (Heath, 2001, 23). All other disenfranchised children who think it unfair could be told that they should have developed more pleasure from the experience of candy. This would be the efficient distribution according to Utilitarianism. The plausibility of the *pareto* claim then is that it considers individual goals and how the candy would help persons achieve their individual goals (Heath, *ibid.*). *Pareto* efficiency is an internal measure in the sense that it looks at the goals a person has set himself;

that is, how he can best achieve them as opposed to the Utilitarian idea that an external measure can make persons a means to producing states of pleasure in an efficient way. The goals may be purely subjective. For example, some males under the age of 25 may have no desire to drive, while others will view it as an essential right of passage to manhood. The value of adopting an efficiency measure is that it moves away from hedonistic measures to simpler ones of preference satisfaction which are not open to measurement and can be deemed internal. So, for example, we do not go down the path as a Utilitarian might, of determining that, since the young receive more pleasure from driving than the elderly, insurance rates ought to be directed to promoting their pleasure. There remains the obvious concern, however, with what these approaches do not address and, and whether it is enough to base public policy solely on such approaches.

C. Deontology

The unease for the Utilitarian approach is based on its lack of focus on the individual and an ignorance of any consideration that the rightness of the act is solely determined by the consequences of the act; that is, acts do not have intrinsic “goodness” or “badness” (Kagan, 1998, 70). Deontology offers an obvious alternative approach to this. The deontologist would claim that while goodness of outcomes is one determinant of goodness, it is not the sole determinant (*Ibid*). The intuition here is that there are several other inherently good factors “with intrinsic moral significance” (*Ibid*, 71). If this idea is true then it could mean that certain acts, even though they have the best outcomes, are not morally permissible. Kagan provides the example of poor Chuck to illustrate this point. Chuck goes into the hospital for routine tests. Unfortunately for him, the hospital’s Utilitarian-minded computer decides that since his body parts are compatible with five other patients who will die without them, Chuck will be sacrificed in order to save the five persons (Kagan, 71). The deontologist rebels at this thought because

he believes that each person has intrinsic worth and therefore cannot be sacrificed for the greater good. What matters here for the deontologist is that some values, like “being innocent”, trump the outputs of Utilitarian calculation. Furthermore, the deontologist argues, it does not make sense to prescribe that the one should be sacrificed for the five if what matters is protecting innocent lives to begin with. The Utilitarian must fundamentally believe that the sacrifice should take place because protecting lives of innocents is good (but as F. M. Kamm states this shows a seeming conflict within Utilitarian theory: “[I]t would be simply self-contradictory for it to be morally permissible to minimize violations of the constraint itself [against harming innocents] for the sake of showing concern for it....” (Kamm, 1992, 184)).

The definition of deontology is usually expressed in terms of there being constraints on how persons may be treated in the face of the pursuit of overall social value. The problem with deontology stems from its specifying what an intrinsically good quality can be. Kant argued that there is just some inherent basic goodness that everyone has *qua* human being. But how can this plausibly be divorced from consequences? Do supposedly “evil” people have some inherent worth that ought to be recognised apart from what they may have done? Considering the present policy under discussion, is it inherently good that all drivers be treated equally in terms of insurance rates (or, more broadly, access to goods or services)? But, ought there not be consideration of the consequences of such a policy? Is it not the fact that equality in this respect in fact leads to harm for certain categories of insured and individuals within those categories?

Is it possible to appeal to some idea of what is intrinsically valuable? It seems that consequentialism offers a better explanation of harm, because of how certain acts impinge on lives, and the deontologist is left upholding, perhaps implausibly, that a person can be harmed even though he has suffered no consequences – in this case, middle-aged drivers are harmed

by a policy that treats all drivers equally in terms of pricing, even though they in fact are offered optimal rates and otherwise suffer no harmful consequences.

D. Rights Theories

Other theoretical approaches can be bundled under the label of “rights” theories. Utilitarianism claims that everyone’s utility units count equally. Rights theories claim that in principle, everyone has the same fundamental rights. What distinguishes the various approaches within the rights theory school is how rights are defined and, inevitably, the critical relationship between potentially conflicting rights. Rights theories have particular relevance to this discussion, since much of the discussion regarding differentiation around age is related to concerns about rights, and the “right” not to be subject to age discrimination.

1. Liberty/Freedom/Security

Some theorists have focused on defining these three ideas – liberty, freedom and security -- wholly in terms of rights. These range from socialists to classical liberals such as Friedman. Applying this approach may, however, give rise to fundamental concerns about the means by which society distinguishes between different rights and how conflicts should be resolved. For example, freedom and security are often in conflict. In this respect, economists examining the issues in the context of regulation might argue that freedom is *pareto superior* (*Ibid*, 1962) to any type of regulation although, for this position to be informative, it must presume the assumption of certain substantive values. So, it might be argued, regulating so as to remove the right of insurers to use age as a discriminating variable in car insurance rates removes the freedom of the insurer to tailor rates to actual risk. Alternatively, is it imposing a cost on the insurer by taking away the freedom to differentiate on age while, at the same time, adding to the freedom of older (or younger) members of society? What means should be adopted to

determine which right prevails? Alternatively, expressing the issues in terms of formal principles of justice, whose value trumps whom else's, so that the trumping value does its job and, at the same time, shows why the right it shores up has a weightier claim. The actuarial models could be used, for example, to defend the current Ontario position. But, of course, these ignore alternative values that might hold. For example, might not the value that prizes distributing rates equally be of superior importance to the unequal distribution that results from adopting the actuarial models as the basis for assessing risk? Again, adopting such a theoretical approach leaves such serious concerns unresolved.

2. Equality and Egalitarianism

The above discussion raised questions of the equality of distribution of rights and these concerns have been addressed by the extensive literature on Equality and Egalitarianism. When concerns were expressed above, the term "equality" was used without much consideration of its underlying complexities. At one level, equality is just a formal concept: treat like cases alike (at some level Utilitarianism, rights, and deontology all accept some idea of equality as a good thing, or at least a constraint on what counts as good reasoning). But what constitutes "likeness" (Hausman and McPherson, 1996,136)? This is clearly a substantive question worth asking.

In order to explain what is meant by equality, it is necessary to turn to other value terms. Miller, for example, claims that equality as a formal idea offers little assistance. It is not mere generic equality that is desired, but equality of something good, worthwhile or a state in which each person can live (Miller, 1982, 73). This inevitably leads to the arguments, often ideological, regarding the things that ought to be equalized, most commonly, welfare or individual rights? For present purposes, for example, the concern might be one of making people in some way

also responsible for their own weaknesses. What might be the values or goods for which equality in this regard can be achieved?

A range of “goods” has been proposed – Welfare, Resources, Equality for Opportunity for Welfare, Equality of Capabilities, Justice as contractualism, for example. Each one tends to emphasize a different good which should serve as the basis upon which equality is measured. For example, Welfare emphasises valuing equality of outcome or well-being and Resources focuses on the equality of the initial distribution of resources within society. While these give rise to important debates, it is concern for Justice as contractualism or social contract theory that clearly is of most relevance to the issues that are the subject of this paper. Instead of assuming common values upon which everyone can agree and perhaps a means by which they should then be measured, social contract theory considers the nature of the relationship or bargain between the state or society and its individual members. For the purposes of the present discussion, only the basic distinctions between the contract theories of Hobbes and Rawls are reviewed.

Hobbes (in *Leviathan*) argued that agents or individuals are allowed to bargain from the positions of the power they already hold. For Hobbes, there is no common good that agents can use to reach agreement; there is only the *summum malum*—or common bad—that all agents seek to avoid. Hobbes’ argued that values are subjective and because everyone desires glory and betterment, the actions of agents in this state of nature will conflict. The problem Hobbes set out, then, was how agents so construed will be able to find common rules and peace. One alternative is that the rich and the strong can use their money to help them ‘contract’ for their own set of social rules (Barry, 1989). Not surprisingly, critics raise concerns for where this leaves the poor or weak and Hobbes “solution” of the use of force, if available, by the weak to balance out those who hold the force of power, is un-appealing -- Hobbes’ system holds that

even the weakest can kill the strongest either by taking a weapon, or using a confederacy. In contrast, Rawls believes that bargaining must take place in a hypothetical situation called the “original position” behind the veil of ignorance’ that removes potential prejudices. This bargaining is only hypothetical because it is assumed that all persons are agents who know very little of the abilities of others (or themselves) but only that those others are, quasi-rational utility maximizers and would want a better life over a poorer one (Rawls, 1971, 60, 83). Since no one knows the consequence of the bargain once they step out from behind the veil, all will accept a regime that provides for the greatest minimal amount of freedom and a form of minimal welfare available under any eventuality to which they might be subject.

In this way, Rawls has sought to show how freedom and basic welfare (security) can be reconciled without relying upon preferences that seem too prejudiced (self-serving). Applying his reasoning to the current issue, all insureds might accept that pricing of insurance premiums may vary with age, since they can be persuaded that they will all be better off with a system of insurance that maximizes the ability of the insurance providers to remain as viable (profitable) entities and which establishes criteria for determining risk based on defensible criteria. Further, it will be to the mutual advantage and it will be just for all persons to pursue their aims as harmoniously as possible. Alternatively, for Rawls, the bargaining position is just, where the outcome relies on what people think is fair given their uncertainty about what positions they will take when they emerge from behind the veil of ignorance. They could, for example, turn out to be poor or handicapped, so they accept that some redistribution is alright.

IV. Refining a Theoretical Approach to the Current Issue

All of the above theories both are problematic and have merit. Realistically, individuals do have mutually conflicting interests. Further, it is clearly observable that not all goods or rights are allocated equally. There must therefore be some plausible quality or property that underwrites individual or social welfare, and which provides a means for resolving these allocation issues. It is not simply about an allocation of scarce resources, but also involves addressing conflicts that arise between rights holders. Rights are typically premised on underlying interests. For example, the right to speak freely is tied to people's interests in developing and revealing themselves through tools of communication. However, the right to speak freely, when exercised in an abusive fashion can impinge on another's interests and denigrate the latter's personal experience and development. It is necessary to address such conflict, and discrimination is an area that can create such conflict. Prohibitions on discrimination, whatever the premise, are intended to benefit the interests of particular groups, or at least not leave them worse off. It inevitably involves infringing upon the freedoms of others but society has decided that restriction is worth imposing. Before moving to a discussion of the term "discrimination", it is important to identify and expand upon the theoretical approach that will be adopted for the balance of this analysis, namely rights theory.

Discussing rights or harms can only proceed if there is an understanding of the underlying substantive value(s) upon which the theory is based. This has already been raised in the preceding paragraph. Most rights theories, for example, define harms as cases of interference with an individual's interests, or violation of rights as bad because of the interests affected. Gerald Gaus proposed that (1999, 119):

“Any discriminatory act – any action that provides differential advantages or burdens – stands in need of justification; any unjustified discriminatory act calls for redress.”

Gaus set out this egalitarian principle in order to contrast it with what he calls the liberty principle. Here, he believes that liberty can be set out in a general, not too theory laden way. Specifically, Gaus says that someone “truly“ lacks freedom when his actions are interfered with by another person (not just the environment) who cannot give a justifying reason for the interference. Benn calls this the basic asymmetry between interfering with another’s action and that other action as having produced no reasons or consequences for it to require interference². This suggests that there may be some substantive reason there, as underlying Gaus’ liberty principle, that would provide a basis in terms of protected interests for rights, and a way to specify what thing ought to be equalized: for now this could be stated simply as negative liberty as described above, although this concept obviously calls for refinement and expansion.

A. Rights, Harms and Interests

A more recent theory of “rights” might offer insight for present purposes: Mack argues that rights are conceived typically in three distinct ways: as benefit, interest or choice theories. The “benefit” theory will not be addressed here since it is, in essence, a Consequentialist/Utilitarian argument that leads to the same concerns already raised above and seems to fall prey to the objections raised about Utilitarianism (that it doesn’t take persons seriously). There remains the need for further explanation of why a right is attached to a person or group of persons, or why

² Benn (1987, 87) presented the following example that illustrates this point: Alan sits on a beach splitting stones. Betty approaches and asks him what he’s doing—she may either desire an explanation from him, or a justification. But if he cannot give a justification can Alan object if Betty tries to stop him? What if she forcibly stops him from splitting pebbles? It seems now that Alan can ask her for a justification for her actions. Benn argues that a tu quoque reply from her that he had not given her a justification for splitting pebbles is not sufficient to justify her act since splitting pebbles had done nothing in the first place to interfere with Betty’s actions. So it seems Alan has a real complaint against Betty, but not vice versa. This is the basic asymmetry between Alan’s acting and Betty’s interfering with him (118).

rights even have the value they do in our liberal democratic society. It is arguably because rights are tied to interests, and in liberal society, the individual is the basic social unit. It becomes relatively simple to fix or evaluate action at the level of the individual. The interest theory is meant to connect rights with interests in a way that shows respect for the individual's aims or goals, while avoiding the problem of Utilitarianism which tends to sacrifice individual interests to society's (Mack, 2001, 74; Dworkin, 1979, 91). The rights claim is that there are certain aspects of an agent's interests or well-being that are of sufficient importance that others will have a duty to sustain those interests, even at some cost(s) to themselves (Raz, 1984, 195). So, here, for example, the young or older driver might claim that they have a right to insurance at comparable rates to all other drivers (presumably, assuming all other significant risk factors but age being equal) on the basis that since their interest in personal mobility is at least equal to that of all other individuals, the younger or older driver should not be unduly required to bear the cost of exercising that interest.

Beyond the collision of rights, there are still difficulties with interest theory. For example, what about the impact on the person who is determined to owe an obligation? What if that person does not agree with the allocation or "weighting" of respective rights? There exists also the potential for paternalism, whereby one might determine what is in another's "interest" and possibly make interests objective goods that are fungible and/or rankable. This can lead back to a Utilitarian type of comparisons and not really protect individual rights. For example, it is apparent that there is a potential clash of interests in terms of need/desire for public safety overriding the need/desire of higher risk drivers to drive. Doesn't the right to safety seem to override the right to drive because, as Raz would say (1984, 85), safety is an interest that everyone has in general? However, so, too, is the interest underlying the right to drive important for many (a person's liberty to do so).

So how does the one interest override the other interest, especially when it has been hardened into a rights-claim, and, more importantly, if we do not think that we can be paternalistic and override a careless elderly person's liberty/right to drive, we seem to be separating interests as the basis of rights claims. Why is a person's general liberty right allowed to hold when this will not protect the person's actual interest (which, it is assumed, is to be safe) (Mack, 2000, 85)? This comes back to the link between rights and interests and this link becomes tenuous when we think that a right would be a protection of some state of affairs that really is not in a person's interest: the right to safety here, for example, weakens the interest in letting all licensed drivers drive.

1. Choice Theory

One means of overcoming these shortcomings is through a Choice theory of rights. Here, the concern is not about ranking moral values (for example, the interest to drive and the interest for safety) in a way that will be acceptable to all, given their various, often incompatible, values. Rather, the theory asserts that what is important in understanding the idea of rights is not the value of the interest that is protected since this is in dispute, but rather who has the power to choose what happens. The theory tries to separate itself from having to judge whose interest ought to trump another's, the moral qualities of the conflicting sides, and look at who has the choice or control over what happens (Hart, 1984, 77-90).

So, insurers might have the right to choose how risk should be reflected in insurance rates and, if they can establish that age is a sound measure for risk, they can choose to apply differential rates based on this criterion. Hart approached rights from the perspective that people had certain basic rights, and that there might be some kind of ideal distribution of rights. However, he also recognized that there could be disputes as between rights, and that there was a need

for a framework to settle rights disputes. Hart focused on past transfers of goods and control. For example, if someone buys a car, he/she has control over who uses it. If they want, they can waive that right, even if it is not in their best interest, and just let anyone use it. So there need not be concern about a person's rights being dependent upon interests measuring up to some standard of good; choice looks after all interests but without, it seems, making them have to measure up to some outside standard of goodness. It really depends more on procedure. People gain and lose rights by the transfers they enter into with others.

This is a more Kantian notion that one can act justly by *performing* acts that correspond to ones that a just principle would prescribe without *intending* to perform such acts. For Kant and for much of law, there is a focus on keeping the correct structure of freedom intact. This is somewhat formal and about allowing others their freedom, but not about allowing them their freedom because one values their freedom or what they do with it, but rather simply because one acts according to the requirements of justice when one respects their freedom. On this basis, there is a way of deciding, for instance, who is right in the case of one's wish for a quiet apartment versus a neighbour's wish to listen to his music as loudly as he wishes; this depends on thinking that the apartment is one's space and the music is trespassing, just as surely as if the stereo owner brought his stereo into the apartment and made the occupants listen to it. Choice Theory rights would say that the correct distribution of freedom is that where each person has their own moral space based on the basic right to one's property and transfer of that property as long as they do not interfere with other's right to the same. This provides further foundation to Gaus' belief that one can define genuine unjustified interference versus mere interference. If one accepts Gaus' liberty principle above, what would constitute a genuine wrongful interference with freedom in the context of age and insurance? If the choice is given to the young or the elderly, it is taken away from the company, or vice versa. The question becomes that of who seems to have the better claim for being unjustly interfered with? This

provides a general framework for evaluating whether any form of discrimination should, from an ethics perspective, be considered unjust.

V. Considering Discrimination

A. Overview

Having laid the groundwork describing the philosophical principles that potentially apply to the discussion, it is possible now to turn back to some of the original questions that were presented above and to examine the meaning of discrimination, and placing it into an ethical framework. Earlier, the term “discrimination” was described as value-laden. In its original meaning, the word means nothing more or less than the act of recognizing or understanding a difference between one thing and another (Oxford Dictionary). It has come to carry both good and bad connotations depending on the context: so, a “discriminating” shopper is one who perhaps only buys high quality items; a discriminating employment policy might be one that refuses to hire persons of certain racial or religious origins. It is not the act of recognizing a difference *per se* that gives rise to concern. Rather, it is the nature of the distinctions that are recognized and the use then to which that information is put. Alternatively, it is not the purely descriptive definition of discrimination that is troubling but rather the normative one—the one about what constitutes morally good/bad discrimination.

In its most negative sense, Nickel (Routledge, 1995³) calls discrimination a form of prejudice, since there is a presumption that certain groupings of persons are morally inferior or undeserving of equal treatment (of course, “prejudice” has a neutral meaning too---so, for

³ Encyclopedia of Philosophy CD version: Entry called “Discrimination”.

present purposes, presume *immoral* prejudice). Ignoring the positive use of the term, the above employment policy will be prejudicial, since it excludes from consideration for future employees persons of certain racial or religious origins where those grounds are arbitrary or have no bearing on the ability of the person to work for that organization. The sole relevant question is whether the person can do the job. If a particular religious commitment makes them unable to attend work at the required time, then they may not be hired. But on both ethical and legal grounds, there must be no suggestion that attendance at that time is not a true requirement, but a surrogate for exclusion.

In a discussion of rights that focuses on how they have been defined through case law and other judicial proceedings, “discrimination” has acquired a strong negative connotation. A legal dictionary has described it as, “...Unfair treatment or denial of normal privileges to persons because of their race, age, sex, nationality or religion. A failure to treat all persons equally where no reasonable distinction can be found between those favored [*sic*] and not favored [*sic*]” (Black’s Law Dictionary, 1990, 467). It is very easy to understand why one might conclude that any differential treatment based on age must be unfair and, therefore, unethical. However, whether or not this is a justifiable conclusion can still be questioned.

In the context of the present discussion around age, the possible discrimination at issue is typically described as “statistical” (Nickel, 1995); that is, there is an identifiable, statistically supported basis for the differentiation that is being made. The relevant distinction involving age is that certain persons applying for automobile insurance coverage are offered different rates than others on the basis of which age category they fall within. These distinctions are based on statistical indicators of potential risk of accident. The critical question then becomes, is this an appropriate use of such indicators?

Wiegers examined these issues in the context of the Canadian automobile insurance industry in 1989 (Wiegers, 1989). She identified one of the most troubling aspects of using statistical discrimination in this context. Statistical analysis certainly establishes that young male drivers within a certain age group are responsible for above average accident losses (as per the evidence provided in the earlier part of this paper). However, within this group, the majority of drivers still have a risk profile that is equivalent to drivers in the older age group. Moreover, while disallowing age as a discriminating factor would increase the cost to all low risk drivers of the burden brought about by high risk drivers, at present, within the high risk category, low risk drivers are already providing a significant subsidy not only to high risk drivers, but to all other low risk drivers of an older age. Wiegers describes this as running counter to Kant's injunction to always treat humanity as an end-in-itself, and not simply the means to one's own end. In the *status quo*, the low risk drivers in the high risk age categories (young or old) are the means to an end: that of providing lower overall rates to low risk drivers in general (Wiegers, 1989, 160).

Wiegers explored the question of what should be known about a person in order to identify a characteristic as an appropriate risk classification. This ties in with notions of justice and deserving but leads to the inevitable question of how much should be invested in refining the level of knowledge. Refining knowledge on an individual level has varying costs. Disclosure of an individual's driving history (with the control mechanism that improper disclosure voids coverage) allows one to better assess the specific risk an individual presents at relatively low cost. As a result, it is regularly utilized. Actually assessing an individual's driving skills and habits to assess risk would also arguably assist in assessing risk but, due to its prohibitive costs in time and money, is not utilized. Efficiency arguments can readily justify foregoing such a costly endeavour. However, efficiency arguments will also, apparently, run counter to differentiating on the basis of age as an alternative. This point will be returned to later, in order to assess whether the conflict is real (there is an ethical conflict) or simply perceived.

Does “statistical” discrimination result in harm? Feinberg proposes that it is one’s interests, both long and short term, that are the object of harm. Further, according to Gaus, there are two generally identifiable categories of interests (Gaus, 1999, 136). Regulative interests are represented by one’s aims and goals. Welfare interests are those interests that are necessary to secure an individual’s regulative interests. There could be any number of interests represented within each. The decision to classify younger drivers as a higher risk based on their age will have an impact. It has an economic consequence on the individual paying for the insurance. It would appear to impact one’s welfare interest. The harm could even be greater if, due to the cost, an individual is unable to drive and to utilize an increased level of mobility that would impact some individuals’ regulative interests. So, it is generally necessary to conclude that harm is incurred by those younger drivers impacted by the decision.

However, the alternative is not without its own harm to people. Assuming that age was removed as a variable, the increased cost would still be borne across other groupings. Accordingly, there would continue to be harm. The two major differences would be that, first, it would not be tied to a classification that many people seem to find odious and, second, the costs would be lower on a per individual basis, since they would be borne by more people. It would also be worth noting that overall, the costs to the system would probably go up since it is apparent that lowering the insurance expense to individuals who present the greatest risk removes an incentive to drive safely, and does result in a greater number of accidents generally, and accidents of a more serious nature.

B. Is the concept of Actuarial Equity ethically justifiable?

The concept of Actuarial Equity was defined earlier. Individuals are not treated equally, but they are treated equitably. Insured individuals pay differing amounts, but what they pay is in

proportion to the expected loss costs they, as a member of a certain group, bring to the insurance pool. That is, equal risks are treated equally, and unequal risks are treated unequally. It is not solely about equality, but equity, since what you pay is what you deserve to pay by virtue of being a member of a particular group and the market circumstances related to being a member of that group.

Probably the strongest ethical argument in favour of Actuarial Equity is that of Utilitarianism. What approach to assessing risk will create the greatest amount of welfare for the greatest number of persons? If it is accepted that a lower individual premium cost and lower numbers of vehicle accidents are both tangible social benefits, then the benefit of the principle of actuarial equity is apparent. First, placing increased costs on a selected group of people (in this case, younger drivers) will have a deleterious effect on a specific group. However, a far greater number benefit by not being forced to share in the cost of the risk. Some are disadvantaged, but a greater number benefit.

The argument is strengthened knowing that if higher risk drivers are not fully required to face the risk they present, the rate and severity of vehicle accidents will increase. This is a situation where the alternative consequence is quite determinable. The alternative increases the overall cost of insurance. As a result, the overall cost of claims will go up to the detriment of all premium paying drivers, who will be forced to bear a portion of the increased expense. Utilitarianism is a theory that can support the differential, and even burdensome, treatment of individuals if a greater benefit is yielded to a greater number. Perhaps this is not surprising in light of the fact that Utilitarianism tends not to focus on the individual perspective. Efficiency considerations can also not be ignored, but they encounter the same difficulties. It should be recognized that the Utilitarian framework does not provide an unqualified affirmation for higher premiums for younger drivers. If one person (or group) sucks up units of utility, and gets more

benefit from consuming more units, then a system that allocates units giving them more, and others less, is a correct one. If younger and elderly drivers received significant utilities from getting a premium break based on age, more than mature drivers who had to pay a marginally greater amount, Utilitarianism could justify that premium break.

The literature on equality and egalitarianism may also provide a basis upon which to justify actuarial equity ethically. Gaus has espoused a slightly different principle of egalitarianism that requires the justification of any action that provides a differential advantage or burden (Gaus, 1999, 119). Statistically, the class of younger age (or elderly) drivers does present a higher risk when assessing who is likely to impose a greater cost in claims than drivers beyond a certain age. Since all drivers in the class pose the same risk at the outset, although the risk will only crystallise with some, they should be treated similarly. There is a relevant and distinguishable difference in the risk, *a priori*, that a youthful driver presents over a middle-age driver. All younger drivers pose that same risk and should be assessed accordingly. Likewise, drivers beyond a certain age will all pose a lower *a priori* risk. The two groups are treated equally within their similar cohort, and differentiated on a relevant characteristic.

There is a clearly distinguishable difference. However, because the differentiation is tied to the concept of age, and the notion of rights and age are so intimately connected it is often assumed that any differentiation on the basis of age is not capable of ethical justification. However, this differentiation can be statistically substantiated and ethically justified. This makes it worthwhile now to consider whether there is some sort of right to drive. If there is, even statistical support may not be sufficient to justify such differentiation.

C. Is there a social right to drive?

Is there a social right to drive? There is no unequivocal right to drive at law, although at least one Canadian lower court decision did conclude there was.⁴ Being able to obtain and maintain a license is a privilege that requires one to show an initial level of competency, and then a driving performance record that supports the continual renewal of the privilege. If there is a social right to drive, one might argue that differential treatment that unduly inhibits, or totally eliminates, one's ability to drive conflicts with this right. In this discussion, there is a distinction between a negative right and a positive right. Here there is a negative right to drive as much as there is such a "right" (freedom) to do many things because people simply have to stay out of your way or give you your basic moral space. There is, however, no positive right to drive that would entail that others have positive duties to help you do it—help pay for the car, insurance, roads, etc.

In the Interest theory of rights described above, the objective is to connect rights with interests in a manner consistent with one's goals and aims. Is the mere arbitrary distinction situated beyond their control, that results in different premiums, a significant limit on their interests and well-being? That is, even if the individual can afford the higher premiums, does the use of age as a distinguishing characteristic present some form of limitation? The complaints that are typically heard from younger individuals in relation to such practices is that it they are "unfair". There is rarely, if ever, a suggestion that it is having a deleterious impact on their larger personal aims and goals. This would suggest that the act of differentiation cannot be considered a violation of any kind of right using Interest theory.

⁴ Re Gaucher, (1979) 22 Nfld. & P.E.I.R. 342 at 350.

However, what would be the impact of a differentiation, and increased cost, that prevented people from driving? Presumably, the need to have mobility in order to work might rise to the level of justifying a social right to drive (provided basic competencies are met). Work is widely acknowledged as being important in our personal identity and self-actualisation. That said, individuals do not all value work in the same way, and for many it does not rise to this level. However, individuals may still argue that mobility is still essential to their individual actualisation, even if only for social interaction. Again, a limitation on the ability to drive is not really a limitation on mobility for many individuals (for example, in urban centres, since there are transit alternatives). They may not be as efficient, but they do provide an alternative means of mobility. So it is not at all clear that even the need to drive can be universally connected with each person's further aims and/or goals. In individual cases, it could be possible to identify where a need to drive is an essential component of one's aims and goals. However, it would not be so universal that it could be said or acknowledged that there is a 'social' right to drive. Accordingly, it is not at all apparent that some sort of "social" right to drive can be ethically justified based on the Interest theory. This would suggest that insurers can ethically justify such differentiation (apart from any express legal right to do so).

D. Does society have a responsibility to ensure drivers can exercise their privilege?

As noted above, the insurance relationship is made up of private actors. It is, however, a relationship that society can elect to regulate. Provinces have intervened by legally requiring drivers to maintain automobile insurance. Provinces have taken different actions with respect to permitting insurers to use age as a pricing variable. Some provinces have prohibited it. Others have created express legislative provisions that authorise the practice. At least one province,

Alberta, has created pricing ceilings that have, while not specifically aimed at establishing limits around using age as a pricing variable, in fact had that practical effect.

All legislatures have a very solid ethical foundation for requiring that drivers be insured. When accidents occur, serious physical and economic harm can result. Requiring that drivers have insurance ensures that all parties should have adequate insurance to cover the damages. Further, Gaus (1999, 152) argues that a harm principle justifies mandatory insurance because if you choose to engage in risky behaviour, knowing you don't have the money to cover harms you may cause, then it seems reasonable to say that the agent ought to get insurance to cover potential harms. While some may have sufficient wealth to cover almost any risk, the majority do not. On that basis, mandatory insurance becomes a requirement. It is not a flawless logical conclusion, since some are forced to purchase insurance although they may not need it (for example, Bill Gates could cover his own risks), but it arrives at what most consider to be an acceptable result.

Examining the question from a rights perspective can still lead to a result that mandatory insurance and differential rates are justified. One can ask the question as to why individuals should have to buy insurance, when their right to not do so seems, to them, to take precedence and, therefore, their right to accept the risk of not doing so does as well? The answer based on efficiency type arguments is that mandatory insurance is necessary because, without it, there would always be the problem of some free riding on others who are less risky. In general, it is true that if people are left to their own devices/ individual rights choices, insurance would regularly not be chosen, or not enough would be bought to fairly reflect the redistributive goal of insurance, hence leading to some collective harm. For younger individuals in particular, an argument can be made that they ought to pay more because their behaviour often results in a free rider problem. Youth are arguably less risk averse, and more likely place less value on

each marginal unit of their life. They are willing to engage in riskier behaviour. In order to have *pareto* efficiency, the market must reflect as best as possible the cost that youths consuming insurance imposes on the balance of drivers (insureds), so that each person in society is in the *pareto* optimal position (cf. Heath, 2001, 126-8). This has a ring of equity or fairness to it as well. To help solve this problem, a legislated deterrent of required insurance is used. Even outside the context of insurance, at least one province (Ontario) has adopted a graduated system of licensing that expressly recognizes that newer drivers pose a greater risk of harm. Considering that most new drivers are still relatively young, this appears to amount to recognition that younger drivers generally represent a greater risk of harm. This would seem to buttress the notion that some greater risk is present.

Having concluded that there is a *prima facie* ethical justification for requiring insurance, should governments be ethically obliged to assist individuals who experience a significantly negative impact from it? This could be in the form of regulating the relationship itself, or providing a subsidy of some form to mitigate the relationship's negative impact. This group would include individuals who are completely prevented from driving as a result of the insurance requirement. This could include those who experience a negative pricing impact from the use of age as a Rating Variable, or any other Rating Variable that is employed. On this basis, we should not differentiate between an individual who cannot purchase insurance as a result of the use of age as a pricing variable, and one who cannot purchase insurance due to having a poor driving record.

It has been argued earlier that if some people cannot afford insurance, this just means that the market is working efficiently. That is, they should not receive it because they are too risky, or could not afford to pay the real cost of insurance. Is there some reason for not allowing a good driver better prices, even though he is part of a supposedly high risk group? Arguably yes,

because at least when using the isolated age variable, insurers do not know who the “good” drivers are. To the extent that other factors reflect positively in a young driver’s favour, they do not have to pay the increased premiums imposed on those who are an identifiably poorer risk on other factors (for example, prior driving history, location of the vehicle, etc.).

Generally speaking, the conclusion that should be drawn is that no, there is no ethical obligation to help. There is no legal right to drive, since the state has the ability to fully grant and remove the entitlement of an individual to drive a vehicle, without legal sanction and under certain circumstances. There is, very arguably, also no social “right” to drive. Furthermore, mandatory insurance and age differentiation can be ethically justified. Accordingly, if somebody is unable to drive as a result of being unable to purchase insurance, whether the issue is one of age or something else, and there is no right to drive, it is very difficult to argue that governments have some sort of obligation to rectify the situation. The situation may create hardships for certain individuals, but this occurs in many situations and no suggestion is made, in those contexts, that the governments necessarily have an ethical obligation to intervene.

Governments that continue to permit differential insurance fees based on age have provided little in the way of explanatory reasons, ethical or otherwise, for doing so. That being said, previous justifications provided for maintaining the use of age would continue to be relevant. The ethical discussion presented by Trebilcock and Rea just over 20 years ago continues to be relevant today:

Laws relating to who can enter into contracts, vote, own guns, drink alcoholic beverages, enter military service etc. suggest a broad social consensus that age is an acceptable discriminator in a wide range of contexts, even though in individual cases these laws will apply stereotypes (average experience) inaccurately to a particular individual for example, some individuals under the age of 18 are quite mature enough to drink, vote, contract, etc., yet are prohibited from doing so; some individuals over this age are not mature enough to undertake these activities sensibly, yet are permitted to do so. Presumably, a

social judgment has been made that the social costs of making these judgments on an individualized basis exceed the costs occasioned to individuals by the unfairness of class judgments. Because age distinctions apply to everybody at some point in their lives, the class connotations of employing age as a discriminator are not nearly as socially objectionable as employing race, religion and sex. Like marital status, a weaker Kantian argument might be made in the case of age that considerations of individual autonomy are violated to the extent that opportunities for individuals to free themselves from the stereotype implied in the age distinctions are not maximized. However, because the social costs associated with this stereotype are not widely viewed as being nearly as serious as some of the other class stereotypes examined, it becomes to that extent more important to examine what costs might be entailed in substituting some other classification system .“ (Rea/Trebilcock, 1982, 76-77).

In the intervening period, it is probably fair to assert that society has become more sensitive to issues of differentiation based on age. This has prompted “discrimination” claims anytime age is involved as a differentiator. This is, however, driven more by a demographic shift, that focuses on an influential demographic cohort that is just beginning to reach their “senior years”. This has resulted in a focus on differentiation that occurs at this age, such as mandatory retirement. There has been minimal related focus on differentiations that occur in the younger age group. If anything, in the area of licensing, there has been a greater recognition of the risks posed by younger drivers (for example, graduated licensing).

VI. Conclusion

“Rights” are the primary foundational discourse upon which people challenge differentiation based on age. However, it is apparent that such assertions are dubious. It is very questionable that a universal social right to drive can be claimed by individuals.

In the legal discourse, rights are typically built upon negative stereotypes and undue harms that result from them. Although age distinctions can be based on incorrect assumptions, or not

appropriately tailored to specific policy objectives as Rea and Trebilcock noted over 20 years ago, that is not the situation when age is considered in this context.

Further actions taken by insurers to differentiate on the basis of age can be ethically justified. First, there are ethical foundations underpinning their action. Primary arguments of efficiency; and Utilitarianism can contribute to justifying such differentiation. Second, although some of these arguments typically encounter difficulties in overlooking individual concerns and interests, such is not the case here. There must be a limit on “rights” claims that can be made to challenge every negative impact. This is a situation where the limit can ethically and legally be drawn. Even if it is assumed that there is a basic interest in permitting individuals to drive and ensuring that any insurance requirements are not unduly prohibitive, that is not completely sufficient to conclude that age differentiation is unjustified.

The Choice Theory of rights provides a mechanism for evaluating which interests should trump others when there is a conflict of interests. Realistically, the interests of younger and older drivers are negatively impacted by the decision to charge differentially. However, in jurisdictions where insurers are given the freedom to impose burdens, there are very legitimate grounds for arguing that the differentiation is justified. When that freedom is taken away, insurers, and other drivers, can make a legitimate claim that they are being unjustly interfered with; this claim is arguably stronger than the claim being made by insureds who are currently bearing an increased cost in their insurance premiums. However, as noted earlier, the language relating to discrimination is so value laden that society is sometimes quick, too quick, to assume that a claim of discrimination automatically means that the discriminator, and the discrimination, is unjustified. As brought out in the foregoing discussion, that is not necessarily the case when age is used as a Rating Variable in insurance.

Finally, governments should not consider themselves ethically obliged to intervene for the same reasons identified above. Although they may choose to, and have done so in certain jurisdictions, there is not any overriding ethical imperative to do so. This is not to say that ethical arguments could not be provided for making such a decision. However, those who choose not to are not without a moral foundation.

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