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CANADA'S AGING POPULATION AND PROJECTED CHANGES IN VALUE ORIENTATIONS AND THE DEMAND FOR URBAN SERVICES

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Marketing Area

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Canada's Aging Population and Projected Changes

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Thomas E. Muller*

This cross-sectional survey of 12 age groups in the Canadian
urban population detected age differences in consumers' value
orientations. Thus, Canada's changing age structure will
likely be accompanied by a shift in value orientations - the
collective result of value orientational changes as a person
ages. Because personal values determine the types of services
that are important to a consumer, this shift in values will
alter the demand for several kinds of urban services and faci-
lities in the next 20 years--in particular, fine restaurants,
movie theatres and family theme parks, as well as for many
kinds of health-care facilities.

THE CHANGING AGE STRUCTURE OF THE POPULATION

The average age of the Canadian population has been increasing monotoni-
cally for the past 28 years. Since 1961, Statistics Canada's demographic
portrait has shown a nation becoming collectively older than it was in
each previous census. Whereas in 1961 the mean age of the population was
below 30, by the year 2001 it is projected to reach 37. This trend is a
reflection of major changes in the population's age structure--due
primarily to the aging of Canada's post-World War II baby boomers.
Figure 1 shows the projected rates of growth and decline, between the

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years 1986 and 2006, for four selected age groups. The population of young adults (ages 15 to 24) and 25-to-39-year-olds is projected to shrink. The number of 40-to-64-year-olds will grow from 6.5 million to 10.5 million in this same 20-year period-- a 60 per cent increase in middle-aged consumers and the volume of goods they will likely require. Because this 20-year period is well within the long-term planning horizon of many marketers, it marks a transition in the consumption needs of adulthood to the needs of middle-aged persons that a marketer cannot afford to overlook. Even in the shorter planning periods of five, ten and 15 years hence, the projected population changes in the middle-aged group are substantial.

Changes of a similar magnitude will occur in Canada's population in the retirement years. The 1986 projection of 2.7 million people aged 65 and over increases to 4.2 million by 2006--a growth of 55 per cent in the number of consumers who are earning pensions, have no nine-to-five job awaiting them each day, have much more discretionary time on their hands, and are healthier than their counterparts in the previous generation. These people have a strong incentive to consume what are termed time-using goods [Engel, Blackwell and Miniard, 1986: 261] such as tours, travel packages, galleries and museums, visits with relatives and friends, do-it-yourself kits, sports and games, novels and libraries--and are less inclined to use time-saving goods such as automated teller machines, instant foods, prepared dinners, labour-saving appliances, home maintenance services, take-out and delivery foods, and rapid-transit services.

Figure 1 about here

THE EFFECT OF AGING ON PERSONAL VALUES

A review of the literature on life-span research and developmental psychology reveals that much research had initially centred on the detection of personality changes (including changes in motives) in aging adults. In these studies, personality is treated as a dependent variable to be explained by changes in age. More recently, however, there is an emerging consensus among many life-span developmental researchers that personality is essential-ly stable over the course of life, and should be treated as an independent variable in studies of adult development [Costa and McCrae, 1986; Erdwins and Mellinger, 1984; Nesselroade and Baltes, 1974; Veroff, Reuman and Feld, 1984].

Furthermore, McCrae and Costa [1982] argue that a fruitful model for future research on adult development is to 'view personality dimensions as independent variables which function jointly with age and stage to influence some of the outcomes of life'. In other words, with personality remaining more or less fixed throughout life, there are outcomes of the aging process which do undergo change over time. Such outcomes would most certainly include peoples' values and resulting lifestyles--as reflected in their activities, interests and opinions.

The combined effects of aging and a relatively stable personality on value orientations have so far received little attention in the literature on life-span development, and even less attention in the marketing literature. Yet, indications are that age differences in personal value are greater than age differences in individual personality traits [Crosby, Gill and Lee, 1984; Felton, 1987. Lowenthal, Thurnher and Chiriboga, 1975].

THE EFFECT OF PERSONAL VALUES ON CONSUMPTION

Values are cognitive representations of various human needs, tempered by societal demands [Rokeach, 1973]. Values are guiding principles, and their relative importance to a person reveal what the person deems worthwhile in life-- what things are worth striving for, possessing, achieving, supporting and nurturing. People have terminal values, that is, desirable end-states of existence that could be labelled, for example, a sense of accomplishment, self-respect, security, an exciting life; people also have instrumental values--desirable modes of conduct conveyed by adjectives like ambitious, cheerful, courageous, honest, imaginative, polite, and so on, that enable people to achieve their terminal values. People typically possess a system of values, or value hierarchy, within which individual values have been prioritised or assigned a relative importance. Hence, the term value orientation denotes the importance attached to a specific type of value. The term personal value is used so as to distinguish a consumer's individual value from the broader societal values of a culture.

One aspect of personal values is their indirect impact on preferences for products, services and even brands. In search of value fulfilment, consumers seek out, identify with and consume products and services that can deliver attributes and 'consequences' related to specific personal values [Perkins and Reynolds, 1988; Reynolds and Gutman, 1988]. Similarly, certain everyday activities [Gärling, Lindberg and Montgomery, 1987] and leisure/recreational alternatives [Pitts and Woodside, 1986] are cherished or pursued by consumers trying to fulfil their value orientations.

Changes in value orientation across the life cycle are likely to have important practical consequences on consumer demand and marketing activities.

For example, the direction and velocity of personal value change in the population--as varying numbers of consumers are projected to pass through the different life stages (young adulthood, bachelorhood, married full-nesters, married empty-nesters, etc.)--will determine what material and psychic goods will be demanded in the Canadian marketplace in the years ahead. With 80 per cent of Canada's population living in urban areas, an important problem is to determine the future demand for urban services and facilities. If a relationship between aging and value change can be empirically established, then this will mean that changes in the population age structure will translate into value shifts at the aggregate (societal) level that are in proportion to the projected size of each distinct age group in the population. These value shifts would likely result in changing demand for urban facilities and services, which were the focus of this study.

The purpose of this empirical study was threefold:

1)   To detect age differences in value orientations;

2)   To identify which specific values differ across the adult life span;

3)   To postulate a few of the future service marketing implications of these value orientational changes, in the context of urban services and facilities.

In this cross-sectional study, a survey sample of 1,200 urban Canadians was divided into 12 age groups. The aim was to see whether the priorities people attach to nine terminal (end-state) values differ by age, and to assess the magnitude of value orientational changes from one age group to another. Also examined was the relationship between specific personal values and the priority a person places on various urban services and facilities.

METHOD

Survey Design

A probability sample of 400 adults living in each of Canada's three largest
metropolitan areas--Toronto, Montreal, and Vancouver--was questioned via
computer-assisted telephone interviewing from a central research facility
in each city. Households were contacted by using an incremental random
telephone sampling technique which allowed new listings and unlisted numbers
to be included in the sample frame. Within each household contacted, one
respondent was slelected randomly using a modification [Bryant, 1975] of
the Troldahl and Carter [1964] procedure, in order to balance the sexes and
ages of persons, 18 years and over, chosen for the interview. The respondent's
age was obtained by asking for year of birth. The findings are based on
completed interviews with a total of 1,197 urban residents during April and
May of 1987.

Value Measures

Respondents were asked to rate the importance they attached to each of
nine personal values: self-respect, security, warm relationships with others,
a sense of accomplishment, fun and enjoyment in life, self-fulfilment, being
well respected, a sense of belonging, excitement. This List of Values is a
typology of terminal values developed at the University of Michigan Survey
Research Center [Veroff, Douvan and Kulka, 1981: 142-146] and based on the
theoretic contributions of Maslow [1954], Rokeach [1973] and Feather [1975].
The List of Values was derived in the context of life-span developmental
psychology and can be systematised to closely correspond with the human need
categories in Maslow's hierarchy. Also, this value typology relates more
closely to major roles in life (consumption, work, leisure, marriage,
parenting) than do the widely known Rokeach [1973] Value Survey's 18 terminal
values [Kahle, Beatty and Homer, 1986].

The value-importance question was put as follows:

I'm now going to name some things that people might look for
or want out of life, such as (the list of nine values was read
out). One a scale of one to ten, where 'one' is 'not important'
and 'ten' is 'extremely important', please tell me how important
each one is to you as a guiding principle in your own life.

To negate any response set due to order, the presentation order of the
values was rotated from interview to interview.

Measures of Importance of City Services/Facilities

Respondents were also asked, on the same one-to-ten scale, the importance
'to your satisfaction with your life in a city' of various services and
facilities that characterise a large city. A list of services and
amenities was adapted from urban livability measures included in Boyer and
Savageau's [1985] Places Rated Almanac. This part of the questionnaire
revealed what priority a respondent assigned to 58 services and facilities
such as low housing costs, a high job growth rate, no air pollution, many
hospitals, low property crime rate, many daily airline flights, many
college and university courses and programs, a professional opera company,
many movie theatres, many public golf courses, a zoo and so forth. The
object was to determine which personal values best predict the importance
people attach to specific urban facilities and services.

Analysis of Age Effects

The sample was divided into 12 age groups (Figure 2) in order to take
advantage of the sample size and to obtain a large number of groups across
the adult life span so that multiple comparisons could be made and age-
related trends detected, while satisfying certain constraints: achieving

group sample sizes that were large enough to be statistically meaningful (n ranged between 45 and 194); preserving the normative age break of 65; it also seemed natural to partition the sample so that the baby-boom generation (1946-1964 birth cohort) remained intact within four groups-- 23-26 to 37-41. Except for the very oldest group (70-85), each group spanned either four or five years.

Since the focus of this study is age differences in value orientations, one-way ANOVAs were performed, with value scores serving as the nine dependent measures and age as the independent variable. Prior to these analyses a check was made for any interaction effects due to sex and location of interview (city) which might confound the findings on age. Nine, separate 12 (Age) x 2 (Sex) x 3 (City) ANOVAs were performed on the value scores. No two-way or three-way interactions were detected. Also, before grouping both sexes into each age group, a check was made that the frequency distributions of males and females, across the 12 age groups, were matched fairly closely. A chi-square analysis showed no significant distributional difference between sexes.

RESULTS

Values and Aging

The results of the one-way ANOVAs are reported in Table 1. Significant age differences showed up in four out of nine value orientations. Figure 2 shows the mean importance given to the value _excitement_, across the adult life span. The 95 per cent confidence intervals about each point are included to identify groups that differ significantly from one another. The ANOVA reveals a highly significant age effect ($F_{11,1185} = 10.71$; p <.0001).

Moreover, a polynomial test for trends exhibits a significant quadratic term and an age-related pattern that deviates significantly from the linear, meaning that the true relationship between age and the value <u>excitement</u> is likely curvilinear. The importance attached to excitement declines—but at a diminishing rate—until age 65-69, then increases among those aged 70 or more.

Table 1 about here

A similar result emerges for age differences in a person's devotion to <u>fun and enjoyment in life</u> (Figure 3). The age effect ($F_{11,1185}$ = 8.45; $p <$ .0001), as well as the linear and quadratic terms in a polynomial trend test, are statistically significant, though the <u>deviation</u> from a linear trend in the age effect did not reach significance ($p < .15$). The importance placed on fun and enjoyment in life declines linearly with age, though a more sensitive methodology may find that the age effect on this value is also curvilinear.

The mean importance of <u>security</u> at different ages is shown in Figure 4. The one-way ANOVA result ($F_{11,1185}$ = 2.01; $p < .05$) and a polynomial trend test reveal a highly significant quadratic term ($p < .005$) and an age-related pattern whose deviation from the linear is barely significant ($p < .06$). It appears that, between ages 18-22 and 42-45, the importance ascribed to security declines very slightly with age, but around the midpoint in life begins to increase again as one gets older. However, this conclusion is advanced cautiously because of the relatively wide confidence intervals around each mean and because pairwise contrasts of age-group means, using the Newman-Keuls procedure (at a nominal alpha of .05), show that significant differences exist only when the oldest age group is compared with 42-to-45-year olds, as well as with two younger groups.

Figure 5 shows how the importance of the value <u>a sense of belonging</u> varies with age. The age effect ($F_{11,1184}$ = 1.98; p < .05), as well as the linear and quadratic terms in a ploynomial trend test, are statistically significant, though the deviation from a linear trend in the age effect is not significant (p < .10). <u>Post hoc</u> pairwise contrasts disclosed that value importance differences appear only when the oldest age group (70-85) is compared to each of the six groups from 18-22 to 42-45—the midpoint in life.

Figure 2, Figure 3, Figure 4 and Figure 5

about here

Values and the Importance of Urban Services

Since the importance of <u>excitement</u> and <u>fun and enjoyment in life</u> decreases markedly with age, while the importance of <u>security</u> and <u>a sense of belonging</u> increases in late life, the analysis next focused on importance ratings for urban facilities that were correlated with these four personal values. A matrix of Pearson product-moment correlations showed that <u>excitement</u> and <u>fun and enjoyment in life</u> were associated almost exclusively with the importance people attach to a city's various recreational facili-ties. <u>Security</u> and <u>a sense of belonging</u> were, without exception, the values which correlated most strongly with the importance attached to a city's various healthcare facilities. Therefore, with the four personal values always serving as predictor variables, 25 separate multiple regressions were performed, using each of the 15 recreational-services variables and ten healthcare-services variables as dependent measures. The reported results include only recreational-services equations with an adjusted R^2 of at least

.05, and healthcare-services equations with an adjusted R^2 of at least .10,
and are shown in Table 2. Due to large sample sizes, only personal values
having coefficients significant at $p \leq$ .005 are reported in the table. In
general, though the observed effects are reliable, the explained variance
in these equations is very low. For example, the values fun and enjoyment
in life, excitement, and security together explain 11 per cent of the
variance in the importance people attach to having many good restaurants
in the city. The values security and a sense of belonging explain six per
cent of the variance in importance attached to many ten-pin bowling lanes.
A discussion of the more interesting relationships among those shown in
Table 2 is presented next.

Table 2 about here

DISCUSSION

In this cross-sectional study using a typology of nine terminal values,
age-related differences were found in the importance people attach to four
such values: excitement, fun and enjoyment in life, security, and a sense
of belonging. The first two can be described as hedonistic values; the
latter two as values concerned respectively with safety and security, and
sociability [Veroff, Douvan and Kulka, 1981: 144-145].

The relationship between age and priority given to excitement is
curvilinear, its relative importance decreasing--but at a slower rate in
each succeeding five-year period--until the late sixties. Its importance
as a value then apparently increases among people aged 70 or older. Also,
people's devotion to fun and enjoyment in life declines linearly with age,

though a more sensitive replication of this study may detect that this value 'bottoms out' during the preretirement decade, then increases in importance in later years. Given that these two hedonistic values are associated with a higher personal priority for fine restaurants and movie theatres, the aging data and the statistics in Figure 1 suggest that the demand for these two services in their present form will likely diminish over the next 20 years. The challenge, therefore, is to revise these two services to make them appeal to segments which place a progressively lower value on excitement. It is also likely that as Canada's population collectively lowers its prioritisation of excitement, there will be progressively less interest in auto racing events. The promotional value of auto racing as a sport will diminish, as this sport appeals to a progressively smaller proportion of the population, mostly young adults, since the importance of excitement is highest among this age group.

Somewhat smaller and fewer age differences were also found for the values security and a sense of belonging. People aged 70 to 85 placed a higher importance on security than people at the midpoint in life (ages 42-45)--when security may be at or near its lowest importance in the adult life span. Across the life span, a sense of belonging was most important to the group aged 70-85, and least important to the six groups aged 18-22 to 42-45. In between these two age extremes, the priority given to either security or a sense of belonging apparently changes little with age. By implication, therefore, the effects of aggregate changes in these two value orientations will come almost entirely from the 65-and-older age group which is growing considerably as a market segment. People who value security and a sense of belonging place a higher priority than others on healthcare facilities and

services. The industry comprised of medical services, hospitals, cancer and cardiac clinics and hospices will greatly expand—not only because people in that stage of life need healthcare as their health deteriorates, but also because they find security in knowing that such facilities exist. They will likely support, lobby and vote for efforts to enlarge the healthcare industry. Recreationally, the higher priority placed on security among the retirement age group should make family theme parks attractive to them as visitors with their grandchildren. However, these theme parks will need to become reoriented toward, and equipped for, the physically less capable older visitor.

Interestingly, out of nine value measures, the values whose importance varied significantly with age correspond to the three lowest human need categories in Maslow's [1954] hierarchy. Excitement and fun and enjoyment in life are value orientations that are expressive of physiological needs; security is the value driven by safety needs; and a sense of belonging is expressive of belongingness and love needs. Furthermore, considering the significance results in nine ANOVAs of the effect of age on a value orientation (see third column of Table 1), the magnitude of significance is inversely related to that value's position in Maslow's hierarchy. Values expressive of physiological needs differed most significantly across the life span; values expressive of belongingness and love needs (warm relationships with others, as well as a sense of belonging) differed least significantly; values expressive of esteem needs (being well respected and self-respect) and self-actualisation needs (self-fulfilment and a sense of accomplishment) did not differ significantly by even the most liberal of scientific standards.

To conclude, this article is meant to stimulate discussion about the related issues of population aging, value change and the future demand for

services. Its findings are only suggestive and its purpose is to draw research
attention to the relationship between these three issues. It is hoped that
this study will also suggest types of strategies in the service industry that
are likely to be needed in anticipation of the growing proportion of middle-
aged and older consumers in the Canadian population. A major limitation of
this study is its cross-sectional design, which cannot separate the effects
of aging and maturation from birth-cohort effects. It is acknowledged that
the age differences reported here may be differences due to environmental
conditions/historical events during the early development of different cohorts,
especially for groups widely separated in age. However, an effort was made
to minimise this possibility by creating as many age groups as practical from
the entire sample of adults, so that comparisons of adjacent 5-year age groups
would be less susceptible to the confounding effects of birth cohort (which
typically span a decade, or more, in this century). However, in no case did
two adjacent age groups differ significantly in value orientation. Ideally,
further research on aging and value orientation differences should take the
more costly approach of combining a cross-sectional research design with a
longitudinal one so that aging and cohort effects on demand for services can
be studied separately.

NOTE

REFERENCES

Boyer, R. and D. Savageau, 1985, Places Rated Almanac, Chicago: Rand McNally.

Bryant, B.E., 1975, 'Respondent Selection in a Time of Changing Household Composition', Journal of Marketing Research, 12, pp.129-35.

Costa, P.T. Jr. and R. R. McCrae, 1986, 'Age, Personality, and the Holtzman Inkblot Technique', International Journal of Aging and Human Development, 23, pp.115-25.

Crosby, L.A., J. D. Gill and R. E. Lee, 1984, 'Life Status and Age as Predictors of Value Orientation', in Personal Values and Consumer Psychology, R. E. Pitts Jr. and A. G. Woodside (eds.), Lexington, MA: D.C. Health.

Engel, J.F., R. D. Blackwell and P. W. Miniard, 1986, Consumer Behavior, Fifth Ed., Chicago: Dryden Press.

Erdwins, C.J. and J. C. Mellinger, 1984, 'Mid-Life Women: Relation of Age and Role to Personality', Journal of Personality and Social Psychology, 47, pp.390-95.

Feather, N.T., 1975, Values in Education and Society, New York: Free Press.

Felton, B.J., 1987, 'Cohort Variation in Happiness: Some Hypotheses and Exploratory Analyses', International Journal of Aging and Human Development, 25, pp.25-41.

Garling, T., E. Lindberg and H. Montgomery, 1987, 'Beliefs About Attainment of Life Satisfaction as Determinants of Preferences for Everyday Activities', in Understanding Economic Behaviour, Vol.3, Proceedings of the 12th Annual Colloquium of IAREP, Aarhus, Denmark: Handelshojskolen, pp.821-30.

Kahle, L.R., S. E. Beatty and P. Homer, 1986, 'Alternative Measurement Approaches to Consumer Values: The List of Values (LOV) and Values and Life Style (VALS)', Journal of Consumer Research, 13, pp.405-9.

Lowenthal, M.F., M. Thurnher and D. Chiriboga, 1975, Four Stages of Life, San Francisco: Jossey-Bass.

Maslow, A.H., 1954, Motivation and Personality, New York, Harper.

McCrae, R.R. and P. T. Costa Jr., 1982, 'Aging, The Life Course, and Models of Personality', in Review of Human Development, T. M. Field (ed.), New York: Wiley.

Nesselroade, J.R. and P. B. Baltes, 1974, 'Adolescent Personality Development and Historical Change: 1970-1976', Monograph of the Society for Research in Child Development, 39, pp.1-80.

Perkins, W.S. and T. J. Reynolds, 1988, 'The Explanatory Power of Values in Preference Judgements: Validation of the Means-End Perspective', in Advances in Consumer Research, Vol.15, Michael J. Houston (ed.), Provo UT: Association for Consumer Research, pp.122-26.

Pitts, R.E., Jr. and A. G. Woodside, (Summer 1986), 'Personal Values and Travel Decisions', Journal of Travel Research, 25, pp.20-25.

Reynolds, T.J. and J. Gutman, (Feb/March 1988), 'Laddering Theory, Method, Analysis, and Interpretation', Journal of Advertising Research, 28, pp.11-31.

Rokeach, M., 1973, The Nature of Human Values, New York, Free Press.

Statistics Canada, (November 1984), Market Research Handbook 1984, Revised Edition, Catalogue 63-224, Table 3-42.

Troldahl, V.C. and R. E. Carter Jr., 1964, 'Random Selection of Respondents Within Households in Phone Surveys', Journal of Marketing Research, 1, pp.71-76.

Veroff, J., E. Douvan and R. A. Kulka, 1981, The inner American: A Self-Portrait from 1957 to 1976, New York: Basic Books.

Veroff, J., D. Reuman and S. Feld, 1984, 'Motives in American Men and Women Across the Adult Life Span', Developmental Psychology, 20, pp.1142-58.

TABLE 1

RESULTS OF NINE ANOVAS OF AGE EFFECTS ON VALUE IMPORTANCE

Maslow's (1954) Need Category	Personal Value (Blocked and Ordered to Correspond with Maslow's Need Hierarchy)	Significance of Differences Among 12 Age Groups
Self-actualisation needs	Self-fulfilment	.749
	A sense of accomplishment	.369
Esteem needs	Being well respected	.656
	Self-respect	.576
Belongingness and Love needs	Warm relationships with others	.090
	A sense of belonging	.049
Safety needs	Security	.049
Physiological needs	Fun and enjoyment in life	< .001
	Excitement	< .001

TABLE 2

PERSONAL VALUES WHICH PREDICT URBAN FACILITY PRIORITIES

Urban Facility	Personal Values	Standardised Regression Coefficient (Beta)	Adj. R^2
Many good restaurants	Fun and enjoyment in life	.17	
	Excitement	.15	
	Security	.08	.11
Many 10-pin bowling lanes	Security	.16	
	A sense of belonging	.12	.06
Many movie theatres	Fun and enjoyment in life	.19	
	Excitement	.12	.07
A family theme park nearby, such as Canada's Wonderland	Security	.21	
	Excitement	.10	.09
An auto-racing track	Excitement	.20	.06
Professional sports teams, such as hockey, football, baseball	Fun and enjoyment in life	.11	
	Security	.11	.06
Many physicians or medical doctors	Security	.21	
	A sense of belonging	.17	.13
Many teaching hospitals where doctors are trained	A sense of belonging	.21	
	Security	.19	.12
Several medical schools	A sense of belonging	.19	
	Security	.17	.10
Many cardiac-rehabilitation clinics for heart patients	Security	.27	
	A sense of belonging	.16	.13
Many cancer-treatment clinics	Security	.26	
	A sense of belonging	.17	.13
Many facilities providing long-term care for terminally ill	Security	.22	
	A sense of belonging	.17	.10

Figure 1. Population projections for each of four age groups, 1986–2006
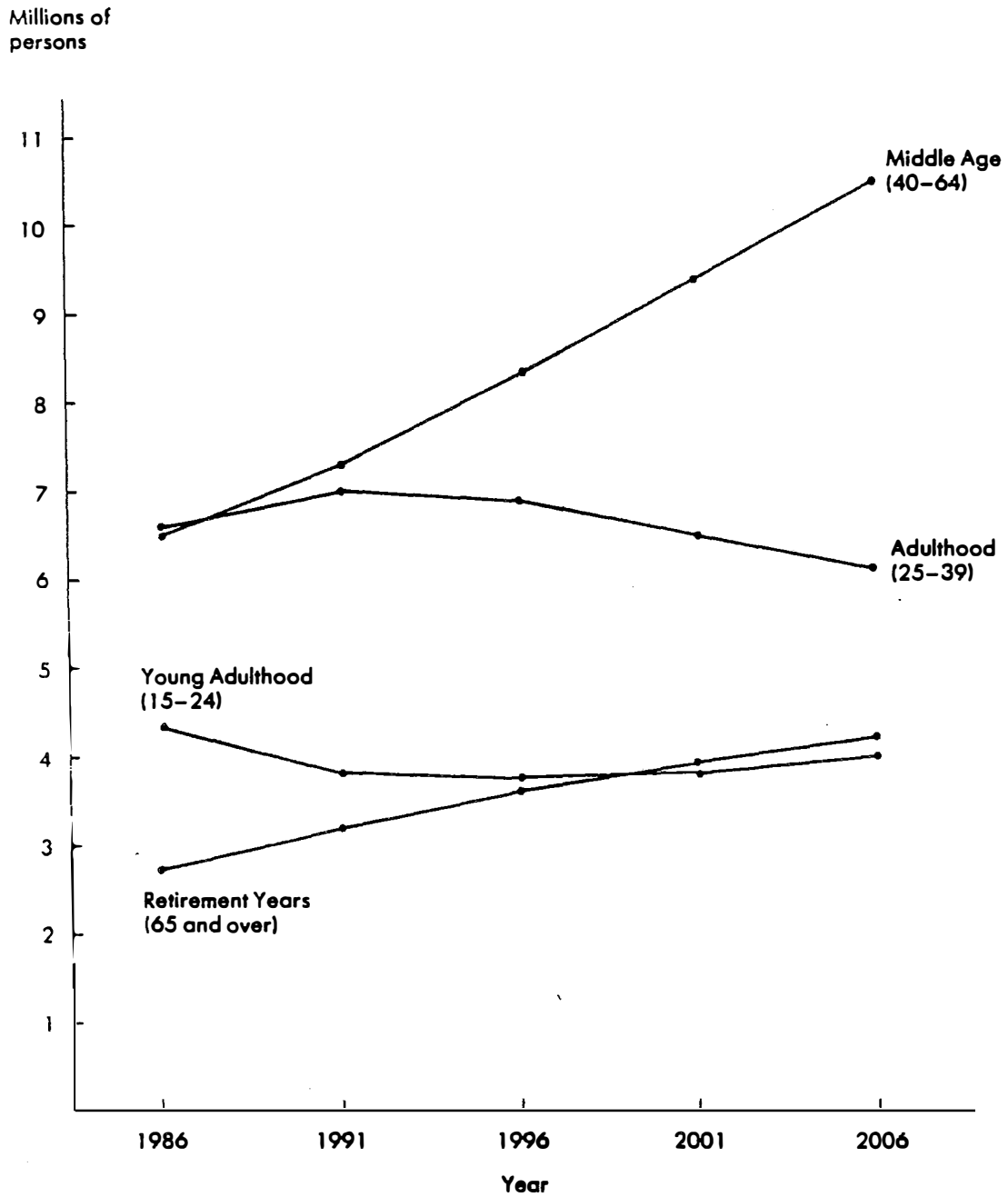
Data Source: Statistics Canada [1984]

Figure 2. Mean importance rating given to the value <u>excitement</u> by 12
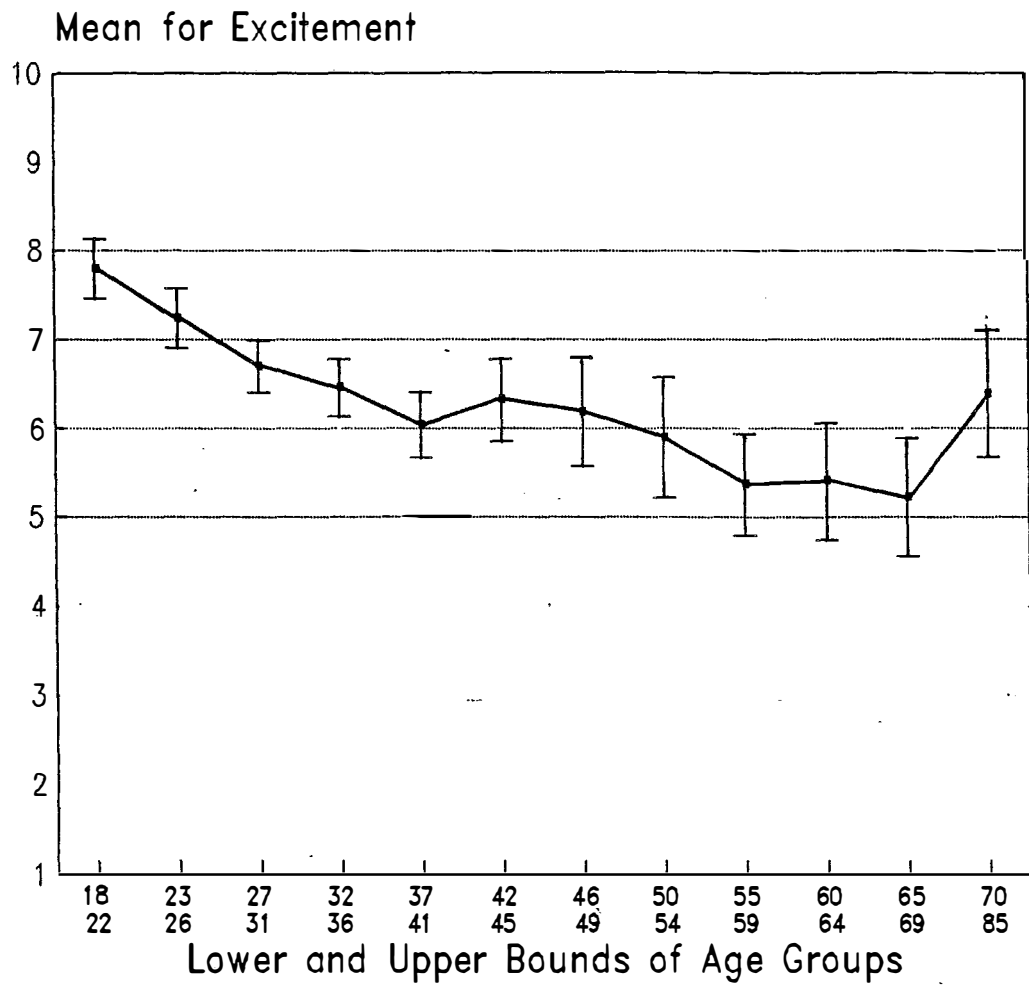
age groups.

Mean for Excitement

Figure 3. Mean importance rating given to the value <u>fun and enjoyment in</u>

<u>life</u> by 12 age groups.

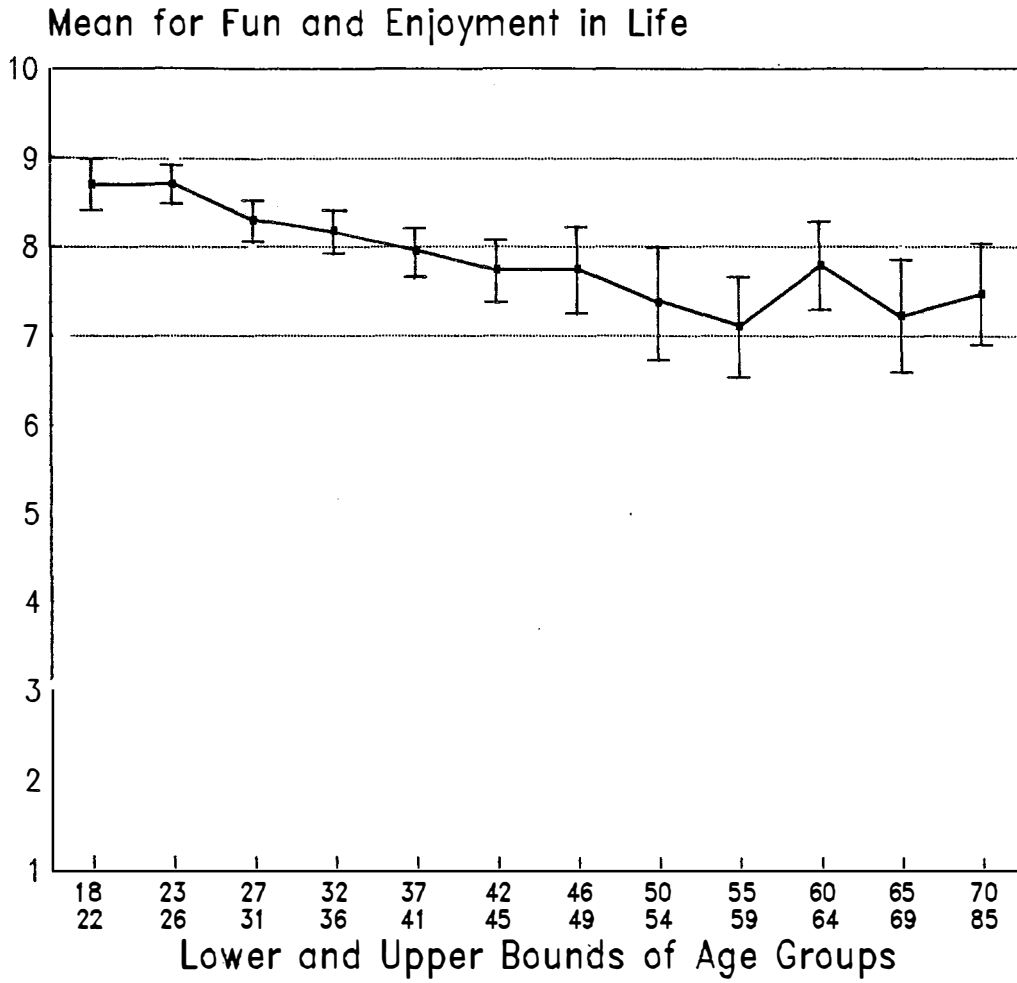Mean for Fun and Enjoyment in Life

Figure 4. Mean importance rating given to the value <u>security</u> by 12 age
groups.

Mean for Security
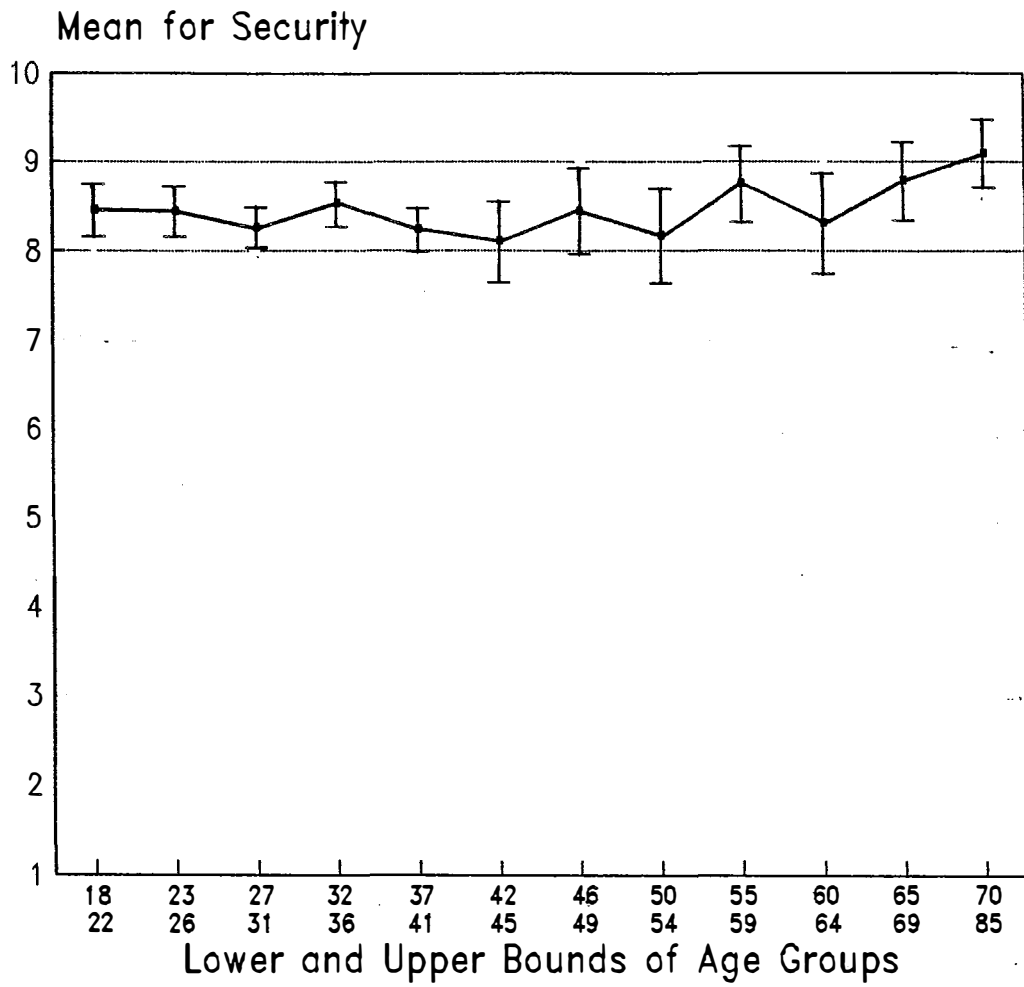
Figure 5. Mean importance rating given to the value <u>a sense of belonging</u>

by 12 age groups.

Mean for A Sense of Belonging
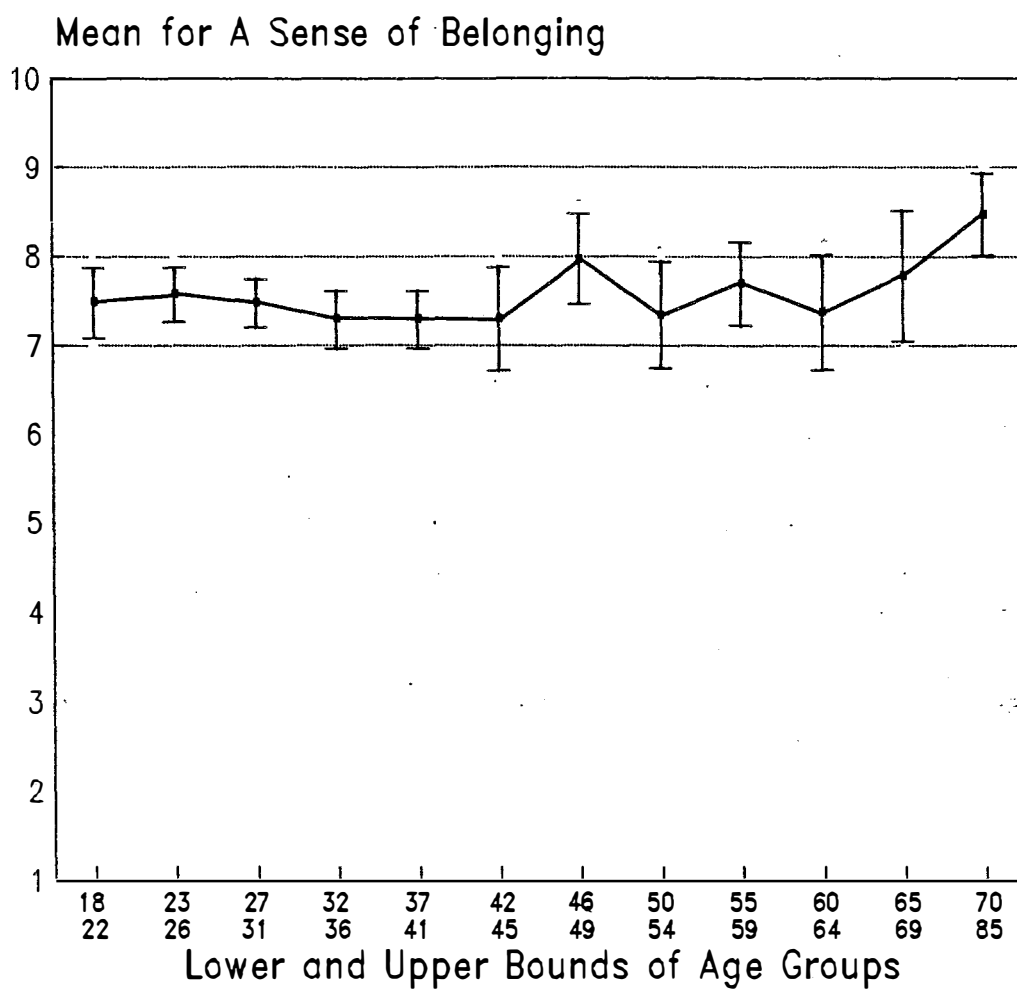
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