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PHYSICAL ATTRACTIVENESS AND ECONOMIC SUCCESS

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August 1998

A thesis submitted to the Faculty of Graduate Studies and Research in partial
fulfillment of the requirements for the degree of Ph.D. in sociology.

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Acknowledgments

I would like to thank Steven Rytina and Axel van den Berg for their very thoughtful comments and editorial help on earlier versions of this thesis.

To Maya

Abstract

Using interviewers' ratings of respondents' physical appearance this study examined the relationship between physical attractiveness and wages treating the former as marginal to a baseline, human-capital derived equation. To test the hypotheses about the consequences of physical attractiveness alone or conditioned by other factors on earnings and wage growth we estimated wage and wage growth equations using 3 cross-sectional and 3 panel data sets derived from the Canadian Quality of Life survey. The cross-sectional estimates indicated that the effect of physical attractiveness on earnings was a plausible one and likely to be conditioned by other characteristics such as firm size, occupation, union membership, frequency of on-the-job supervision, and level of formal schooling. The 'above average' rated workers received pay premia ranging from +2.2% to 6.1% while those 'below average' received pay penalties ranging from -2.7% to -13.0% relative to the grand mean. The 'average' rated workers received pay penalties ranging from -0.7% to -3.4%. The main source of these wage differentials appears to be discrimination based on looks. The results of panel specifications also provided some support for the notion that physical attractiveness ratings were associated with differential wage growth and that the relationship between physical attractiveness and wage growth might be moderated by other individual or institutional characteristics of the workers, especially before adjustments for the lagged effects of wages were made. Overall, these results provide a moderate level of support for the thesis that physical attractiveness plays a role in the wage determination process in modern labour markets.

Word count: 261

Résumé

À partir de la classification des interviewers concernant l'apparence physique des répondants, cette étude examine le rapport entre l'apparence physique et les salaires. L'apparence physique est une variable ajoutée au modèle *human-capital* pour estimer les salaires. Pour tester les hypothèses concernant les conséquences de l'apparence physique - seule ou conditionnée par d'autres facteurs - sur les salaires et la croissance des salaires des répondants, nous avons estimé les salaires et la croissance des salaires en utilisant trois ensembles de données transversales et trois ensembles de données longitudinales dérivés du sondage sur la qualité de la vie des canadiens (Canadian Quality of Life survey). Les estimations à partir des données transversales indiquent que l'effet de l'apparence physique sur les salaires est plausible et vraisemblablement conditionné par d'autres caractéristiques comme la taille de l'entreprise, l'occupation du répondant, son appartenance à un syndicat, la fréquence de la supervision en milieu de travail et le niveau d'éducation formelle du répondant. Par rapport à la moyenne globale, les travailleurs classifiés «au dessus de la moyenne» recevaient des salaires entre + 2,2% et + 6,1%; ceux classifiés «en dessous de la moyenne» recevaient entre -2,7% et -13,0%; et ceux classifiés «moyens» recevaient entre -0.7% et -3.4%. Une certaine forme de discrimination basée sur l'apparence physique semble être à la base de ces différences de salaire. Les résultats à partir des données longitudinales donnent peu de poids à la notion selon laquelle les différentes catégories d'apparence physique soient associées à différents niveaux de croissance des salaires ou que la relation entre l'apparence physique et la croissance des salaires puisse être modérée par d'autres caractéristiques institutionnelles ou individuelles, surtout avant les ajustements effectués par rapport aux salaires précédents. D'une façon générale, ces résultats offrent un soutien modéré à la thèse selon laquelle l'apparence physique joue un rôle au niveau du processus de détermination des salaires sur le marché de travail contemporain.

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"It is only shallow people who do not judge by appearances.
The true mystery of the world is the visible, not the invisible"
Oscar Wilde, *The Picture of Dorian Gray*

INTRODUCTION

Scientific study of physical attractiveness and its role in modern industrial societies began in the early 1960s. Berscheid and Walster, some of the early pioneers of research in the area of physical appearance, noted that even though our appearance is so obvious and accessible to others in almost every social situation, most social scientists have shown a truly professional disinterest -- either neglecting or negating its importance (1974:158). An interesting explanation designed to account for this historical neglect of the physical appearance variable in social sciences was put forward, at approximately the same time, by Aronson. He suggested that,

"It is difficult to be certain why the effects of physical beauty have not been studied more systematically. It may be that, at some level, we would hate to find evidence indicating that beautiful women are better liked than homely women - somehow this seems undemocratic. In a democracy we like to feel that with hard work and a good deal of motivation, a person can accomplish almost anything. But, alas, (most of us believe), hard work cannot make an ugly woman beautiful. Because of this suspicion perhaps most social psychologists implicitly prefer to believe that beauty is indeed only skin deep - and avoid the investigation of its social impact for fear they might learn otherwise" (1969:160).

The fact that physical appearance and the role it plays in our society was not addressed in any systematic manner prior to the early 1960s does not imply, however, that physical attractiveness and its social relevance was ignored. A recent attempt to place the discourse on physical appearance in both the historical and philosophical context revealed that throughout the history of Western civilization "beauty has been associated, in one way or another, with

goodness, truth, wisdom, love, happiness, and ultimately God" (Synnott, 1988:48; Synnott, 1993; cf. Shilling, 1993;). Not only the social importance of physical attractiveness appears to be timeless but, as noted by Shapiro, an anthropologist, the urge to enhance one's appearance is so universal "that one is almost tempted to regard it as an instinct" (1947:456).

The immense significance of appearance in contemporary societies can be also seen in purely economic terms. Nader (1986) estimates the value of the retail cosmetic industry in the United States in 1986 at \$17 billion. Naomi Wolf, in her book *The Beauty Myth*, places the value of cosmetic industry in the United States at \$20 billion a year, diet industry at \$33 billion a year, and at \$300 million a year an increasingly expanding cosmetic surgery industry (1991:17). The age at which people begin to experience anxiety about their appearance is also getting younger. Research suggests that a substantial number of girls and boys as young as nine years old are unhappy with their bodies (Hall, 1992).

It is not surprising, therefore, that the last 30 years has witnessed a veritable explosion of interest in physical attractiveness phenomena. As a result of this interest, a large body of literature was produced to explain and demonstrate an impressive number of advantages and, to a lesser degree, disadvantages associated with physical attractiveness. However, the bulk of theorizing and empirical research has been carried out thus far in social psychology with fairly marginal contributions from other social sciences such as sociology, anthropology or economics. Although there is considerable consistency of the finding that physical attractiveness is positively related to various measures and concepts of social, economic, and psychological well being, the causal interpretation of these relationships as well as their theoretical

rationale often remain uncertain. As usually stated, the issue is whether these associations arise from the fact that physical attractiveness leads to a higher/better social, economic or psychological well being or whether a higher socioeconomic status or better psychological adjustment leads to a more favourable assessment of one's physical appearance. The exact mechanism(s) involved as well as the explicit theoretical rationale for either of these relations -- beyond the 'halo effect' or 'self-fulfilling prophecy' -- is poorly conceptualized and the resulting research tends to be non cumulative and fragmented (see Webster and Driskell, 1983).

The issue of causality is additionally complicated by uncertainty as to how physical attractiveness and the "outcomes" studied might interact with each other over time, hence further clouding the postulated causal inferences. Even though most of the associations between physical attractiveness and a multitude of "outcomes" studied are routinely described using explicitly causal terminology, the actual demonstration of causality is, in most cases, assumed rather than adequately conceptualized or empirically substantiated.

Conceptually, the role that physical attractiveness plays in modern societies is further obscured, on the one hand, by an unstated cultural norm that differential treatment based on physical attractiveness constitutes a basic form of injustice. And, on the other, by a belief held by many that attractiveness is a trivial characteristic without any serious social consequences. Upholding these ideals -- which of course are almost never invoked when it comes to our own conduct -- might have undermined our attempts to understand the role played and mechanisms *via* which physical attractiveness operates in our society. It appears that most social scientists have failed to recognize and to accept that

physical attractiveness -- just like age, gender or race -- can be viewed as a master status (cf. Webster and Driskell, 1983; attractiveness as a 'diffuse status characteristic'). As noted by Beuf "A master status is the first thing others "see" in a person; thereafter, they tend to respond to the person solely in terms of this status, rather than in terms of the complex of statuses occupied by the person or the personality traits he or she possesses" (1990:14).

For the above stated reasons, examining the relationships between physical attractiveness and various social, economic or psychological outcomes is challenging both conceptually and methodologically. Theoretical explanations of these associations, when found, range from attributional to ascriptive differences based on looks and there are considerable disagreements as to why and how physical attractiveness is thought to influence our lives. Methodological problems are also complex and they range from the difficulties intrinsically associated with the reliable and valid measurement of physical attractiveness itself to research designs that would help to clarify the postulated causal links in a more satisfactory manner.

The following sections will highlight some of the conceptual and methodological difficulties associated with studying the possible effects of physical attractiveness and their mechanisms. Particular emphasis will be placed on whether and how physical attractiveness might relate to economic success in modern labour markets.

Conceptual Issues

Physical appearance seems to constitute a considerable advantage or handicap throughout life. Consciously or not, and with varying degree of success over the outcomes, we all seem to be affected in a multitude of ways by how we perceive ourselves, how we perceive others and how others perceive us. Recently, there were several attempts in social psychology research to interpret the findings generated in the area of attractiveness along the theoretical frameworks defined by status generalization theory, expectancy theory and implicit personality theory. The common thread of these frameworks is that physical attractiveness plays an important role in the formation of an impression and evaluation of another person and the self. There is considerable disagreement whether these impressions are constructed according to the aggregating or averaging principles, stereotypes or self-fulfilling prophecies but, physical appearance, simply by virtue of its immediate accessibility is believed to be a relevant source of information about others. How this information is being utilized, if at all, and how and why it then relates to economic success is the main subject of the present study.

As indicated earlier, there is an impressive body of literature on the halo effect of attractiveness and the horns effect of ugliness. The common finding of the vast majority of these studies is that a relationship between the individual's perceived characteristics and his/her appearance exists. Despite our claims that we don't 'judge a book by its cover' the empirical evidence rarely supports these assertions. In addition, even if importance of physical appearance is acknowledged, studies show that it is almost always severely underrated. There is some evidence, generated by more ingenious research designs (see

Hadjistavropoulos and Genest, 1994 and their use of a lie-detector-like apparatus), which suggests that this denial of the relevance of physical attractiveness -- at least in the dating context -- might be due not so much to ignorance but rather to a cultural taboo stipulating that physical attractiveness should not be used as a relevant source of information about others or as a basis for differential treatment.

At the same time, it is worth noting that differential treatment or actual differences based on physical attractiveness, although frequently assumed, are not well substantiated in the existing literature. Most of the studies conducted in this area thus far dealt with expectations, perceptions or beliefs about attractive individuals, and not with demonstrated differences in behaviour towards them or actual differences between individuals in terms of social competence or other characteristics based on their physical appearance. Finally, a few experimental studies that did demonstrate behavioural differences based on attractiveness may lack external validity when applied to real world extended interactions with dynamic targets (see Alley, 1988).

Based on a recent survey of employers in the United States (Holzer, 1993) the number of jobs where physical attractiveness of the employee is deemed as pertinent is, indeed, considerable. The employers were asked "How important or unimportant is attractive physical appearance (for the job most recently filled)?" Fifty percent responded that looks were very (11%) or somewhat important (39%). This finding takes on additional weight if we consider that "the status attainment literature has been crucially crippled by not noticing that it is employers who pass out good jobs. Consequently the theory of status attainment must be a theory of what employers find valuable, and only

secondarily a theory of which individual workers get the characteristics that employers find valuable" (Stinchcombe, 1986:18). Finally, as our economy enters the post-industrial, service-based era, the number of jobs selling "good feelings" or requiring extensive dealings with the public, and thus potentially increasing the functional aspect of physical attractiveness in the labour market, is likely to increase.

Contemporary societies are said to be characterized by an "increasing emphasis on rationality, universalism, functional specificity, and emotional neutrality or avoidance" (Levy, 1966:62). This departure from ascription and particularism of the earlier periods is particularly pronounced in the modern industrial economies which are geared toward profit and efficiency and, as such, are assumed to be primarily concerned with ability, experience and training as the most important criteria used to allocate individuals to occupational roles and as determinants of their economic success. However, others argue that strictly meritocratic approach fails to consider the mixture of economic and noneconomic motives (Granovetter, 1988) that are believed to characterize modern labour markets. Boyd et al. noted that "because an industrial occupational structure demands talent, the universalistic criteria become paramount, and, although vestiges of particularism remain, they are viewed as 'irrationalities'" (1985:5). Some of the most frequently studied and documented 'irrationalities' include sex, race/ethnicity, age, social status of the family of origin and the role they play in the process of status allocation and economic success in contemporary societies.

The hypothesis that physical attractiveness plays a role in earnings determination does make intuitive sense, especially in work contexts where

discrimination can be more easily exercised, or where such a trait may become a functional aspect of job performance, such as in sales and services. Every individual brings varying degrees of physical attractiveness to the labour market along with other attributes and skills. Some attributes such as punctuality or responsibility are probably relevant and hence financially rewarded in all occupations while others such as physical strength, ability to interact with the public, or eye and hand coordination are more pertinent in some jobs than others. The functional importance of physical attractiveness in the labour market is likely to range from irrelevant (e.g., bricklayer) to pertinent (e.g., waiter) to indispensable (e.g., fashion model). Just as the speed of typing or ability to speak several languages is more important -- and presumably rewarded accordingly -- in some jobs than in others, so might be physical attractiveness and its possible impact on workers' wages in those occupations where looks might influence, or might be assumed to influence, productivity.

Methodological issues

In investigating the relationship between physical attractiveness and economic success, we are particularly interested in the extent to which physical attractiveness causes or predicts economic success of individuals who differ in terms of attractiveness. Adequate demonstration of causality requires that a study be internally valid. Internal validity, in turn, is predicated on the absence of analytic bias and on proper statistical inferences. Furthermore, since other researchers may be interested in the extent to which a study's results can be extrapolated and generalized to other populations, external validity is also an issue. Each of these major categories of methodological concern will be discussed in turn, with specific indications of how they pertain to studies of

physical attractiveness in general and to studies of physical attractiveness and its relationship to economic success in particular.

Internal validity

A study will be internally valid to the extent that is able to eliminate, or at least substantially reduce, analytic bias. Analytic bias can occur through any of four mechanisms: (1) confounding bias; (2) reverse causality bias; (3) information bias; and (4) selection bias.

Confounding bias and effect modifiers

In confounding bias the relationship between physical attractiveness and economic success is altered by the existence of a third factor(s) that is associated with both attractiveness and, independently of attractiveness, with the measures of economic success. Variables such as age, gender, ethnic origin, or type of occupation are potential confounders because these factors are likely to be associated with both economic success and physical attractiveness (or at least the assessment of it). It is also plausible that some of these variables might be acting as effect modifiers. These types of variables, however, are fairly easy to control for through matching, stratification, inclusion of the interaction terms, or multivariate statistical techniques. Conceptually, these variables are of great interest, because they might help us to clarify the causal mechanism(s) involved or help to identify subgroups of individuals who are the most/least likely to benefit from the effects of physical attractiveness.

There are other confounders or effect modifiers that present more difficult analytical problems. Particularly prominent among these are motivational, social (e.g., class of origin) or intellectual differences (perceived or actual) between

individuals who differ in terms of attractiveness. Since these differences may have an independent effect on economic success, they are likely to be potent confounders.

Reverse causality

The second type of analytic bias is reverse causality bias, in which the physical attractiveness and economic success are causally related but the temporal sequence is the reverse of that postulated by the research hypothesis. In other words, the hypothesized outcome (economic success) actually preceded and caused the predictor (physical attractiveness). Thus the respondent's higher socioeconomic status may have led to the more favourable perception of physical attractiveness *via* a stimulus generalization or "halo" effect. It is also possible that having more financial resources at one's disposal, a correlate of economic success, can substantially help to 'improve' one's physical attractiveness. In addition, members of the higher social strata might be a great deal more attractive due to assortative mating or even their ability to redefine what is considered "beautiful". Consequently, the causal direction of this relationship would be reversed or, at least, should be conceptualized quite differently. Reverse causality bias is particularly likely to occur in cross-sectional studies since it is frequently difficult to know the true temporal sequence between two variables when the two are determined (measured) at a single point in time.

Information bias

In information bias, misclassification (i.e., erroneous measurement) of either the predictor (physical attractiveness) or outcome (economic success) leads to a biased estimate of the association between the two. If measurement

errors are random, as would be the case with merely "sloppy" measurements, the bias would be toward finding no association between physical attractiveness and the economic success. Such a situation might arise from inability to reliably measure physical attractiveness, economic success, or both. Of potentially greater importance is non-random (systematic) misclassification, in which, for example, economically more successful individuals are also systematically classified as more attractive, regardless of their "true" level of attractiveness. This also raises an intriguing issue as to what is their, or for that matter anyone's, "true" level of attractiveness and whether the reliable and valid assessment of it is possible.

In most studies, the conceptualization and operationalization of the physical attractiveness variable leaves much to be desired. This is probably one of the reasons why the scientific community and the public alike often perceive research and findings in the area of physical appearance as either trivial, self-evident or scientifically unsound. One of the commonly heard criticisms is that it is impossible to objectively and accurately measure this variable and thus most of the research in this area is biased, highly subjective and as such has little scientific value. It is important, therefore, to look closely at the question of what is physical attractiveness, what are its determinants and whether it can be measured in a reliable and valid fashion. There is also a need to consider whether conceptualization and the measurement procedures utilized to assess physical attractiveness in most social-psychological studies are equally valid when applied to the labour market relations.

Selection bias

Finally, in selection bias, the association between physical attractiveness and economic success (or some other outcome) is biased by the way study subjects are selected from the target population of which they are presumably representative. If the relationship between physical attractiveness and economic success in those selected for study is different from those not selected, bias will obviously occur. The use of psychology undergraduate students or some other non-random samples in many of the studies might have, therefore, undermined the generalizability for many of the findings related to the physical attractiveness phenomenon.

Statistical inference

Statistical inference involves an examination of the possible role of chance (random variation) in explaining a research study's findings. The actual study sample is presumed to be representative of some larger target population. The observed association between physical attractiveness and economic success is compared to the null hypothesis of no such association in the target population. The statistical inference may be erroneous for one of two reasons: (1) the null hypothesis is falsely rejected when, in fact, it is true (Type I error); or (2) the null hypothesis is not rejected when it is actually false (Type II error). These two considerations are largely determined by the effect of chance and the size of the sample studied relative to the hypothesized effect. The use of small samples -- as is frequently the case in attractiveness studies -- especially when the hypothesized effects are likely to be small or moderate, will significantly increase the probability of committing a Type II error.

External validity

Many investigators will be interested in the extent to which the results of a given study, even if internally valid, are generalizable (externally valid) to other populations. External validity may be limited by factors related to the study subjects or study procedures. Differences in study subjects can arise either because of selective participation in a study, the study of special subgroups, or regional and cultural differences between one population and another. Selective participation means that subjects who agree to participate in a study may not be representative even of their own group or community.

External validity can also be compromised by a study's procedures. This can occur if the experimental conditions are so unusual or specific that it is not generally possible to replicate these conditions outside of the lab. Thus far, the bulk of the research addressing physical attractiveness has been conducted in the field of social psychology. Because many of these studies were conducted in experimental settings, using small, non-random samples, external validity is certainly an issue.

STUDY RATIONALE

The possibility that "aesthetic relations are perhaps as socially significant as class relations, gender relations or race relations, despite, or perhaps because of, their non-institutionalized status" (Synnott, 1988:48) provides the main rationale for the present study. Embedded in the possibility that appearance matters are questions about the ways in which appearances matter, how much and to whom. Probably one of the most intriguing sociological questions involving beauty is its possible relation to individuals' economic success in the modern labour market. A survey of the literature makes it clear that there has been little systematic thought about the role of beauty in the labour market and that the empirical analysis of this issue has almost exclusively dealt with small, non-representative, and cross-sectional samples.

OBJECTIVE

The main objective of the present study is to undertake a systematic survey of the relationship between physical attractiveness and economic success. In order to accomplish this objective the study is further divided into the following sub-sections. In Section I (A, B and C) we will examine the issue of what is physical attractiveness and its significance in our culture, in general, and in the work context, in particular. We will also address its operationalization and measurement, including reliability, temporal stability, and validity. In Section II we will examine the literature concerning the relationship between physical attractiveness and various measures of social, economic, and psychological well being. We will review the existing empirical evidence for the "what is beautiful is good" thesis as well as the theoretical frameworks according to

which these studies were conducted and their results interpreted. In Section III we will look at the conceptual and empirical literature concerning the role of physical attractiveness in the labour market. We will critically appraise the existing literature concerning labour markets, productivity, and determination of wages with a special emphasis on whether and how physical attractiveness might be incorporated into the existing theoretical frameworks. Section IV will outline a number of empirically testable hypotheses concerning the role of physical attractiveness in the labour market. Section V will provide description of the methods and the data utilized in the present study. In Section VI and in Section VII we will present the results of cross-sectional and panel specifications of the hypotheses tested, respectively, as well as our discussion of the main findings. Finally, in Section VIII we will provide our conclusions, including the limitations of our approach and some ideas concerning future research on the role of physical attractiveness in the labour market.

"Beauty as we feel it is something indescribable: What it is or what it means can never be said"
G. Santayana, *The Sense of Beauty*

SECTION I - PHYSICAL ATTRACTIVENESS

A. WHAT IS BEAUTY?

The word "beauty" itself derives from the Latin *bellus*, a diminutive of *bonus*, meaning good. It is interesting to note, for whatever it is worth, that there are other languages that equate physical attractiveness and moral virtue (see Lakoff and Scherr, 1984:192-195). Systematic accounts of a relationship between physical appearance and human character have appeared throughout Western history. The "what is beautiful is good" thesis is well entrenched in our collective psyche and it includes an impressive list of adherents such as Homer, Plato, Aristotle, Dante, Bacon, Milton, Keats, Hegel, Emerson, Schopenhauer, and numerous others including more contemporary writers and philosophers (Synnott, 1988).

The fascination of our civilization with beauty and its counterpart, ugliness, as well as their attributional consequences are evident even to the most casual observer and can be found in exaggerated form almost everywhere: in our literary heritage, mass media, fairy tales, religion, ethnic relations and popular culture. Beauty, and the perfection that it implies, is valued intrinsically and almost unequivocally. People like to possess, look at, be associated with, things, places or persons that are considered beautiful. Attractiveness, as the name implies, attracts. The opposite, that is ugliness or

plainness, is said to operate in a mirror-like fashion but with much less favourable consequences.

The recognition of appearance as a basic element of social life has long been enshrined in the idea of the sumptuary laws. These laws, which governed styles in clothing, were in existence in Europe, mainly, between the thirteenth and seventeenth centuries. Sumptuary laws, and their less institutionalized counterparts existing at other times or in other places, were aimed at preservation of the social hierarchy by ensuring that with one glance, individuals could recognize the social standing of others. Throughout history, distinctions have been made in the styles of dress and trimmings permitted for wear by different social groups (von Boehn, 1932, cited in Finkelstein). The prominence of these laws also speaks to an enduring belief in the importance of physical appearance and it indirectly suggests who has, or at least who had, the power to define the standards of beauty.

A recent study demonstrated that class differences need not to be institutionalized in order to be visible. Mazur (1993) examined whether a woman's social class can be accurately judged from her formal wedding portrait showing the head and neck. He concluded that subjects could usually guess the social class of the brides on the basis of their facial attractiveness, hair and hat styles. Even when the facial features were blanked out, subjects could still guess their social class, apparently on the basis of hair and hat styles alone. A Canadian study conducted by Baldus and Tribe (1978) used sets of pictures showing two men (one dressed casually and one formally), two houses (one in an upper and one in a lower class neighborhood), two living-rooms and two cars (one old and one new and expensive) and asked children in grades

one, three and six to play a matching game. They found that children at a very young age have already absorbed the attributional implications of social class and that this ability was not affected by gender, school environment or parental socio-economic status. Furthermore, the well-dressed man was described by the children as nice, intelligent, cheerful and well liked whereas the casually dressed man as lazy, likely to swear, steal or drink and not caring about his family.

Historically, the human body has been regarded as a material and social asset in most cultures. The body may be seen both as a tool for the production of food and communal survival and the means by which social status and power are symbolically attained, maintained, and displayed to others. Fraser (1981) and others (Molloy, 1975; Davis, 1992) have maintained that fashion and styles in appearance have the effect of making visible and concrete our personal circumstances; they are in large part, physical representations of our economic position and location in the occupational hierarchy, and our competence with institutionalized modes of decorum. Styles of clothing and ideals of beauty signify, therefore, fundamental statuses of gender, age and class which, in turn, provide a basis for social engagement and differentiation. As Bourdieu (1984) and Goffman (1969) illustrated (cf. Veblen, 1954), the search for distinction continues to be a major driving force behind impression management. This preoccupation with distinctiveness and its 'exterior' manifestations cannot but solidify and ensure the continuing importance of physical appearance in modern societies. The same sentiment was also echoed in the writings of Simmel (1950) who suggested that a society dominated by money, power and status produces a form of human sociality which inevitably becomes superficial and repressive.

It is certainly no novel observation that North American culture has been substantially influenced by the Protestant ethic. Over the years, the heavy emphasis on self-denial and asceticism that characterized the Puritans, has filtered into the mainstream of our culture disguised as wonder-diets, health fads, eating disorders and exercise classes. In this modern era of middle class aerobics, exercise and diet freaks, the Protestant ambivalence concerning beauty has circled back on itself, as "beauty" does, indeed, respond to sweat or life lived in moderation, void of self-indulgence (Rytina, 1993). In this context fatness, for example, is not viewed simply as physically unattractive, but rather as a walking testimony of some basic character defect (Beuf, 1990:37).

The billions of dollars -- and oceans of tears and sweat -- spent annually to improve, disguise and/or maintain the way we look testify to our belief not only that physical attractiveness is important but also that, to a certain degree, it can be bought or achieved. Of course, the hotheads of the beauty business knew about it all along and they have the balance sheet to prove it. This is how *Vogue*, in more 'innocent' times, revealed to us the heartbreaking truth "And to anyone who clings relentlessly to the Puritan whimsy that looks don't matter, we wish to say, 'Face facts, they do. If you don't quite got all you need, go out and buy them'" (Vogue, 15 Sept., 1960).

Over the last few years, in addition to various cosmetic, pharmaceutical, and fashion fads and styles, numerous plastic procedures have developed in response to fashions in physical appearance. Little toe ectomies were popular when women were wearing pointed and high stiletto-heeled shoes (Lakoff and Scherr, 1984:179). In recent years, urbanized and consumer oriented Japanese and Korean women have made blepharoplasty (eyelid surgery) much more

common. Finally, the last few years witnessed a considerable increase in breast augmentations and liposuctions as well as a variety of rejuvenating 'treatments' and 'techniques'.

Resorting to the scalpel is nothing new: once upon a time Cinderella's sisters hacked off hunks of their feet in order to interest the prince. Techniques (and prices) have changed somewhat, but basic motivations have remained the same. Cosmetic surgery is growing in popularity as baby boomers grow older and stigma associated with chopping, adding or stretching various bodily parts has all but vanished. The New York City yellow pages, for example, "list more than five times as many plastic surgeons as pediatricians. Men do it too, but according to professional estimates, 75 percent of all patients are female, widowed, divorced, or single and over forty" (Melamed, 1983:140). Never before has the technology of youth and beauty been so sophisticated, available, expensive or sought after.

Assuming that all that money and effort are not spent in vain, physical attractiveness can be viewed as both an ascribed and an achieved characteristic (cf. Webster and Driskell, 1983). Research suggests that this money is well spent as perceived facial attractiveness -- at least for average-looking females -- is, indeed, enhanced when cosmetics are used. Cosmetics were also found to enhance self-perception of attractiveness and increase positive affect about the self (Cash, 1985, 1988). Manne, Girasek and Ambrosino (1994) evaluated, for example, the "Look Good, Feel Better" program, a cosmetics class designed to restore the appearance and self-image of women with cancer who were hospitalized for breast surgery. Women in the

experimental group reported significantly greater improvements in their mood and perceptions of their attractiveness when compared with the control group.

While it is true that some of the fundamental features and characteristics of physical attractiveness are undeniably ascribed, others are increasingly portrayed as modifiable or purchasable. A large number of studies that have examined physical attractiveness assumed, explicitly or implicitly, that beauty is a biological, structural trait. However, it was suggested that this view is incomplete because it does not consider the variability in beauty judgments attributable to self-presentation strategies such as make-up or posture (Osborne, 1996; Cash, 1988; Graham and Kligman, 1985). Schlenker noted, for example, that "It is often said that looks can be deceiving, which is not surprising given the amount of time, energy, and money people expend attempting to create desirable impressions" (1980:268). Individual or cultural variations in terms of how much importance is assigned to looks or how well one is 'naturally' endowed will obviously play a role as will the financial or motivational resources and opportunities available to pursue "better looks". At the same time, there are anecdotal examples suggesting that when it comes to looks even the law of diminishing marginal returns tends to break down.

Physical attractiveness and its attainment and/or maintenance is frequently portrayed as open to every person who is motivated, self-disciplined and willing to work hard. The language utilized is strikingly similar to the one normally reserved to describe educational or occupational attainment in modern societies. And, as noted by Collins, "the competition for personal attractiveness grows more salient as more people find they have opportunities in that direction" (1975:280). Our popular culture transmits, with varying degrees

of sophistication, a message that most of us are unlikely to attain our optimal level of personal success unless our physical appearance is also developed to its fullest extent. But, as any plain person would testify, the amount of willful modification should not be overstated. A frequently heard argument that appearance -- at least in some measure -- is under control of the individual, and that individuals who do not present or attempt to present a more appealing physical appearance are themselves at fault, cannot but help to legitimize differential treatment based on looks. While physical attractiveness is almost surely more subject to willful modification than other ascriptive characteristics such as gender or race, the actual magnitude of such modifications remains fairly limited.

Even though it sounds counterintuitive it is also worth contemplating whether there is a point beyond which attractive appearance shifts from being a status resource to being a burden, as suggested by some studies (Dermer and Thiel, 1975; Cash and Janda, 1984; Sigall and Ostrove, 1975). Dermer and Thiel (1975) observed that attractive people may be perceived as vain and egotistical when rated by unattractive raters. It seems, however, that these negative effects of beauty are not that numerous, strong or important as evidenced, for example, by the fact that there are not many people who would undergo surgical procedures or who would take other drastic steps in order to intentionally become less attractive. This should not to be confused with becoming 'optimally' attractive for a particular social setting or role as the two issues are quite distinct. While becoming 'optimally' attractive might create an overall impression of reduced attractiveness, its ultimate goal and motivation is to maximize rather than to reduce the impact of looks. Furthermore, as noted by Webster and Driskell, many of the apparent 'disadvantages of attractiveness'

reported in some studies continue to demonstrate "that attractive people are seen as being better at doing something than unattractive ones. They are seen as more accomplished swindlers or as being more successful in finding illicit lovers" (1983:142).

There is some evidence suggesting that at least some of the associations involving attractiveness might be bi-directional or reciprocal (i.e., "what is good is beautiful"). A study by Wilson (1968) found that people increased their estimates of another person's height as his academic status was manipulated (i.e., elevated). Height, especially for men, is a correlate of attractiveness (Patzner, 1985; Ross and Ferris, 1981; Lerner and Moore, 1974). Another study (Johnson, 1981) suggested that attitude similarity of stimulus persons and the subjects had a positive impact on evaluations of physical attractiveness. Those stimulus persons who were supposedly aligned with the same political attitude as the subjects were rated highest in physical attractiveness. Webb et al. (1989) who conducted a literature review of research on interpersonal attraction and aging noted that perceived agreement in attitude tends to neutralize young adults' general perception of the elderly as unattractive. These examples suggest that certain types of additional knowledge about someone might in fact influence the assessment of physical attractiveness. However, whether this invalidates these assessments or simply renders them more socially relevant and accurate remains unanswered.

But what if, as suggested by some, "physical attractiveness is an important variable only in initial stages of interaction and that its influence decreases rapidly with the weight of additional information about the person" (Berscheid and Walster, 1974:205). Others argue that while first impressions

may be deceptive or deficient they are there, and whether we like it or not, they might constitute an important factor contributing to how we treat others and how others treat us. Needless to say, we never get a second chance at making or improving first impressions. As a result first impressions might prove to be difficult if not impossible, to erase. Whether in fact "beauty is all very well, but who ever looks at it when it has been in the house three days" as G.B. Shaw once remarked, is a question of empirical research and not speculations based on personal convictions or witty one-liners.

It may well be that we use physical attractiveness as a "clue" or substitute for relevant information as to how we should interact with strangers. However, once more objective or meaningful information becomes available we use that newly acquired information not only to guide our subsequent interactions but probably also to assess (reassess?) their attractiveness which by then is likely to be of secondary relevance, anyway (Bull and Rumsey, 1988). Assuming, of course, that the first impressions were not too damaging or too decisive and that the additional information was in fact forthcoming or that the first impressions would not affect the way in which this additional information was processed and utilized.

Isaac Bashevis Singer wrote, in one of his stories, on the difficulties intrinsically associated with the impact of first impressions,

"I also knew that no woman had ever been attractive to me at first. In all my relationships I had to undertake a slow process of erasing the first impression, or at least overcoming it and correcting it. Behind the façade of ugliness or egotism was always hidden another face, or perhaps another façade. I tried to hasten the evaluation, to strip away the outer layer and catch a glimpse of what was beneath" (1979:165).

A study conducted by Ambady and Rosenthal (1993) suggested, however, that many of us may lack time, energy or opportunity to 'strip away the outer layer'. They report that judgments based on very brief silent video clips (under 30 seconds) of college teachers by their students conducted at the beginning of the term significantly predicted global end-of-semester student evaluations of these teachers. Research indicates that the first impressions can have profound and long lasting effects by way of expectancy confirmation processes and self-fulfilling prophecies (Jussim, 1986; Miller and Turnbull, 1986). Perhaps there is a lot more information contained in the way we look than we are willing to admit or consciously recognize and perhaps some of it may be even correct.

The levels of competence or motivation which are accepted as legitimate bases for differential treatment in modern societies are not the type of characteristics which are immediately accessible or easily verifiable in many social interactions. The irony of modern societies is that, on the one hand we are expected to be rational and universalistic yet, at the same time, the very nature of modern societies frequently supplies very limited and rarely objective information needed to attain that ideal. This, as noted by Finkelstein, is the paradox of modernity "namely, that the self is fashioned from external, often purchasable elements rather than wrought from the private ruminations of an individual" (1991:172). Many social interactions -- including those found in the labour market -- involve large numbers of single and brief interactions with total or near total strangers (e.g., service-based industries). Under those circumstances, it may be impossible for us to verify whether the first impressions were in fact correct or not (cf. Tönnies, 1957; and his notions of *gemeinschaft* and *gesellschaft*).

There are considerable disagreements concerning what is beauty and how judgments about it are possible. According to some, beautiful features seem to be those which deviate in specific ways from what is typical in the population. Others argue that it is averageness and symmetry that render our faces attractive (cf. Milan Kundera's *Immortality*, 1991). It was suggested, for example, that the existence of the universally valid rules of how to judge beauty aesthetically must be based either on fundamentals which are common to all humans or on intrinsic, common characteristics of the beautiful objects or people (Rentschler, Herzberger, Epstein, 1988). Edmund Burke, in 1757, attempted to define beauty according to the latter criteria. This is what he came up with:

"On the whole, the qualities of beauty, as they are merely sensible qualities, are the following: First, to be comparatively small. Secondly, to be smooth. Thirdly, to have a variety in the direction of the parts; but, fourthly, to have these parts not angular, but melted as it were into each other. Fifthly, to be of a delicate frame, without any remarkable appearance of strength. Sixthly, to have its colours clear and bright, but not very strong and glaring. Seventhly, or if it should have any glaring colour, to have it diversified with others. These are, I believe, the properties on which beauty depends; properties that operate by nature, and are less liable to be altered by caprice, or confounded by a diversity of tastes, than any other" (cited in Lakoff and Scherr, 1984:46).

Others, following in the footsteps of David Hume, argue that 'beauty in things exists in the mind which contemplates them.' This approach to beauty has its counterpart in the popular expression that 'beauty is in the eye of the beholder'. Most social scientists believe, however, that there is a considerable social consensus as far as standards of attractiveness are concerned (Berscheid and Walster, 1974; Hatfield and Sprecher, 1986) and they measure it accordingly (i.e., by consensus). Consequently, an attractive

individual is nothing more than an individual that most people consider to be attractive.

Another cliché concerning beauty is that it is only skin deep. The only problem with the cliché, according to evolutionary biologists, is that it might not be true. In the view of a growing number of researchers who study why animals are attracted to each other, a beautiful face and figure may be alluring not for whimsical aesthetic reasons, but because outward beauty is a reasonably reliable indicator of underlying quality. These biologists (Gangestad, Thornhill and Yeo, 1994; Grammer and Thornhill, 1994; Thornhill, Gangestad, 1993) have gathered evidence from studies of species as diverse as zebra finches, scorpion flies, elk and human beings suggesting that creatures appraise the over-all worthiness of a potential mate by looking for at least one classic benchmark of beauty: symmetry. A number of studies conducted according to this framework suggest that symmetry promotes adaptive mate selection by way of producing offsprings with parasite resistance (Thornhill and Gangestad, 1993). In another study Grammer and Thornhill (1994) showed that facial symmetry has a positive influence on facial attractiveness ratings for both men and women.

The theory of neotony is another biologically based theory relevant to physical attractiveness. It refers to a biological thesis which states that human evolution has been significantly influenced by the retention of juvenile physical features. The word literally means 'holding youth' and the 'foetalization theory' claims that humans have evolved through progressive juvenilization (see critique by Gould, 1980). A study by Jones (1995) reported, for example, that neotenous facial proportions (i.e., large eyes, small nose,

and full lips) were perceived as attractive across five different cultures, even after female age was controlled for. On the other hand, the results for male attractiveness were weak or inconsistent. The same study also suggested that female models had neotenous cephalofacial proportions relative to US undergraduates and that drawings of faces artificially transformed to make them more or less neotenous were perceived as correspondingly more or less attractive (cf. Cunningham, 1986). Studies conducted according to this framework suggest that 'facial beauty' is the result of sexual selection and that a beautiful female face has features and proportions indicative of high fertility (Johnston and Franklin, 1993).

Another area of research, conducted according to the evolutionary mate selection framework, suggests that waist-to-hip ratio (WHR) is an important determinant of the ideal body shape for both genders, across different age groups and cultures (Singh and Suwardi, 1995; Singh, 1995, 1994, 1993). According to the research conducted in this area, the WHR appears to be correlated with reproductive endocrinological status (for women) and long-term health risk (both men and women). Other studies suggested that another of the 'wisdom's' of popular culture -- that one cannot be too rich or too thin -- is not supported empirically. Thin female figures were neither perceived as most attractive nor assigned desirable personality traits, except for youthfulness. Instead, normal-weight female figures with low WHR (0.7 -0.8) were rated to be the most attractive and were attributed many desirable characteristics (Singh, 1994b).

It is unclear which aspects of our physique -- or combination of them -- are most relevant determinants of physical attractiveness and whether they

are similar for both genders, different age groups or across time within and between different cultures. Because standards of beauty do not exist in a social vacuum, both social class and ethnicity are also likely to play a role in their establishment and maintenance. There is some evidence that standards of beauty are increasingly universal (Cunningham et al., 1995; Langlois and Roggman, 1990) but methodologies and samples used as well as the aspects of beauty that were actually evaluated (e.g., facial attractiveness, facial shape, symmetry, waist-to-hip ratio, etc.) varied too much to arrive at any firm conclusions. The centrality of the face (for females) as the main determinant of physical attractiveness seems to be well established (Berscheid, 1981; Smith, 1985) but even this might be an artifact of the earlier research in the area of physical attractiveness with its emphasis on female facial attractiveness and use of the photographs of the face to assess the overall physical attractiveness. At the same time, several studies that utilized multiple indicators of physical attractiveness suggest that it is, indeed, facial attractiveness which constitutes an independent and significant predictor of both physical attractiveness ratings and the outcomes studied (Perkins and Lerner, 1995).

The identification of women with beauty has a lengthy tradition in Western culture (e.g., vulgarization of William Hogarth's 'line of beauty'). The notion that women were by nature more beautiful than men and hence that the preservation and inoculation of beauty was women's special concern is alive and well. As suggested by some (Tseelon, 1992), beauty defines and values women in terms of their appearance. By doing so, it doubly situates them in a stigmatized position. First, because women are evaluated according to the

idealized criteria of beauty and, second; because they are ultimately destined to transgress them.

The issue of gender differences received a considerable amount of attention in relationship to physical attractiveness (see review by Jackson, 1992). A growing body of evidence seems to support the claim that beauty is a sex-related trait. That is, at every age, appearance is emphasized more in females than in males. Once again, it is difficult to unequivocally conclude whether physical attractiveness is more 'important' for women than for men and in which social contexts. This is partially due to the fact that a disproportionate number of studies in the area of attractiveness concentrated on women and partially to the apparent confusion between social importance of attractiveness and its exchange value across different social roles or settings. The possibility that social expectations concerning physical attractiveness are higher for women than for men, for example, does not imply that the actual returns or advantages/disadvantages associated with attractiveness will be different for the two sexes. One can speculate, for example, that different settings or social roles might call for different levels and/or types of attractiveness and that these requirements might be more stringent or restrictive for women than for men.

Finkelstein suggested an interesting explanation which might account for the persistence of the double standard concerning the amount of attention that is expected to be devoted to physical attractiveness by men and women. She noticed that the Western ideals of attractiveness have made women much more responsible for their physical appearance than men,

“... the current ideal in appearance in the industrialized West deems that women should be thinner and men should be taller. It is significant, in this era where feminist ideas have to some extent

altered the distribution of social prestige between the sexes, that these specific requirements entail vastly different efforts on the part of women and men. For instance, height is generally regarded as a fixed attribute whereas weight is thought to be alterable, albeit with some effort. Being tall is a happy circumstance over which one has relatively little control, but being heavy is entirely of one's own making." (1991:180-181).

At present, the issues of whether males and females reap the same benefits from being attractive and the same penalties from being unattractive and whether these differences manifest themselves in a uniform manner in all types of social settings, including employment, are far from being resolved.

Others argue that "although women are far from economically equal with men, it is now possible for a number of different things to be bargained: income resources as well as sexual attractiveness, social status, personal compatibility, deference, and emotional support" (Collins, 1975:250). Because of the increased participation of women in the paid labour market they bring their own economic resources to the bargaining table, including demands for physical attractiveness on the part of men. These changes in the economic status of women have resulted, according to Collins (cf. Walster et al., 1966), "in the rise, especially in youth culture, of the ideal of male sexual attractiveness" (1975:250). Recent statistics concerning paid labour participation by women estimate that only around 7% of women in US are engaged exclusively in the traditional roles of wife and mother (Rodin and Ickovics, 1990). Traditional gender stereotypes tended to evaluate male competency in terms of performance while physical attractiveness was the measure of female success. The increased participation of women in the labour market probably resulted in convergence of these stereotypes; more women are now evaluated, in addition

to physical attractiveness, in terms of performance and more men are evaluated in terms of physical attractiveness.

Of course, as usual when gender relations are involved, there are misconceptions concerning what men and women think the opposite sex idealizes about them. A study by Jacobi and Cash (1994) found that men tended to overestimate the extent to which women want them to be larger and have blue eyes and blonde hair. Women, on the other hand, overestimated the extent to which men prefer women who are thin and have muscular definitions, large breasts, blue eyes, and long blonde hair. The existing evidence on mate preferences, including several population based and cross-cultural studies, suggest that men tend to value physical attractiveness and youth in women and that women value earning potential in men (Sprecher, Sullivan and Hatfield, 1994; Liu et al., 1995). A large study by Buss et al. (1990) examined international preferences in selecting mates in 37 cultures ($n = 9,474$) and they found consistent differences between females and males in value attached to earning potential and physical attractiveness, respectively.

Even though women were traditionally identified with beauty, a few studies that were based on national probability samples and where physical attractiveness of men and women was rated suggest that there are no statistically significant gender differences in the overall (mean) physical appearance ratings (Hamermesh and Biddle, 1994). Presumably, judges utilized different criteria to assess physical attractiveness of men and women but the overall attractiveness level and its distribution followed a similar pattern. This would suggest that, at any given time, the physical attractiveness of the population represents a roughly bell-shaped distribution with some sub-cultural

'noise' and age-related skewness. This assumption is further supported by the fact that height and weight, both of which are important determinants of attractiveness, tend to follow a similar distribution (see Nicholas Mascie-Taylor, 1990). There is also some evidence that the distribution of facial attractiveness in the population may be positively skewed and thus "attractive faces, in fact, are only average" (Langlois and Roggman, 1990:120).

One can further speculate that because beauty is a quality which is highly valued and much sought after it has to, in order to maintain its value, remain relatively unique. Its counterpart, ugliness, has to be equally scarce because of the stigma associated with it (cf. Blumstein and Cohen, 1973; on stability of punishment thesis). It is probably true that modern affluence has raised, in absolute terms, the general level of attractiveness of the population as a whole through better diet and health (see Collins, 1975). But it is also fair to assume that in relative terms, via a homeostatic principle or some other mechanism, a certain, relatively stable proportion of the population would be always considered as very attractive and an equally small and relatively stable proportion of the population would be judged as unattractive and both will have to live with the consequences of that assessment.

It is clear that standards of beauty within a particular culture change somewhat over time. As remarked by Hamermesh and Biddle, "The Rubens ideal looks much different from her Northern European counterpart walking down the runway at a modern Paris salon" (1994:1175). Variations of a somewhat smaller magnitude can also be seen in the ideal of male attractiveness. However, from the standpoint of an individual -- ignoring for the moment changes in physical appearance associated with growing up and aging

-- the historical evolution of attractiveness standards are probably too slow and too minor to drastically alter how one is perceived by others or by himself/herself in terms of his/her appearance.

These changing standards of attractiveness were identified, for example, by Banner (1983) who pointed out that the 1921 winner of the first American beauty contest would be considered overweight by our contemporary standards. Garner et al. (1980) reported that in the two decades from 1960 to 1980, the ideal appearance of women has become thinner. Before 1970, women contestants in the Miss World beauty contest weighted 87.6% of the average but, after 1970, this had declined to 84.6%. A study by Rich and Cash (1993) examined the hair colour ('blondness') of cover models and centerfolds in three magazines (Vogue, Ladies Home Journal, and Playboy) over a thirty-year period in relationship to a normative sample of Caucasian undergraduate female students aged 18 to 35. They found that the prevalence of blondes in each magazine was higher than in the normative sample for each of the decades studied. This over-representation of blondes was highest in the 70s and lowest in the 60s. In addition, the proportion of blondes was consistently higher in Playboy relative to the two other magazines studied. Perhaps blondes are more sexy and have more fun or perhaps this is an example of a social role where blondness is at premium.

A study by Schindler and Holbrook (1993) attempted to identify at which periods in life inter- and intra-gender preferences in physical appearance standards were formed. They found that men formed their lifelong preferences for women's physical attractiveness styles on the basis of standards and styles that were popular when these men were in their early 20s. Women's

preferences both for women's and men's appearance styles as well as men's tastes for men's styles were more likely to be formed during a broader and older range of years. They concluded that both nostalgia and mere exposure were responsible for development of these preferences. These findings, if generalizable to other settings such as employment, might play a role in inter- and intra-gender on-the-job evaluations or hiring and promotional decisions.

Why do standards of attractiveness change over time? The evolution of physical attractiveness standards can result, for example, from the emphasis placed on certain facial or bodily features (e.g., mini skirts, colour and style of hair) by the fashion, entertainment and media industries (cf. Iancu et al. [1994] on the development of anorexia nervosa). Some of these changes are also likely to result from objective inter-generation differences (e.g., height, rate and scope of inter-racial breeding, health and nutritional changes). The establishment and diffusion of world-wide standards of physical attractiveness are not only possible but probably also economically desirable (e.g., global marketing). According to president of Nabisco, the goal of globalization is to create 'homogeneous consumption' where everyone buys the same products, wears the same clothes, watches the same movies and hums the same songs. It can be speculated that the attainment of that goal would be certainly facilitated by the emergence of the global standards of attractiveness.

As in most relations where groups with different power and resources participate, the preferences of the dominant ones usually tend to prevail. As noted by Strutton and Lumpkin (1993), there is evidence suggesting a disproportionately large percentage of advertisements with Black models possessing features more Caucasian than Negroid in the US. This is not

surprising, of course, given that lightness of the skin among Black women is associated with attractiveness (Bond and Cash, 1992). A study by Hughes and Hertel (1990) found that light-skinned Black women tend to marry men of high occupational prestige (cf. Elder, 1969). The unspoken "Whiteness" of the 'beauty myth' suggests that standards of attractiveness do not exist in a social vacuum but are also determined by the existing power relations (cf. Wolf, 1991). The possibility that physical attractiveness issues might be further complicated in ethnically diverse societies, especially when ethnicity is intertwined with social stratification, suggests that similar processes can probably be extrapolated to global, international and inter-cultural, contexts. Bond and Cash (1992) examined the role of skin colour as it pertained to various body-image measures among light-, medium-, and dark-skinned Black college females (aged 18-37). They concluded that although subjects were generally satisfied with their skin tone, the idealization of lightness was apparent in several respects.

It is also worth exploring, especially in multi-ethnic societies such as Canada or the US, whether discrimination against ethnic minorities is not confused with discrimination against the 'bad looking' or vice-versa. This is likely to happen if there is, for example, a tendency to perceive some/all ethnic minorities as 'funny-looking'. As stated earlier, it is probably reasonable to assume that physical attractiveness *within* a particular group or society would tend to be normally distributed. However, *between* group differences in terms of physical attractiveness, when assessed in multi-cultural societies, might reveal over- and under-representation of some ethnic groups at different attractiveness levels. This is likely to be mitigated by factors such as the scope of ethnic

stratification, the respective size of the groups involved or the objective physical differences between them.

There is also a possibility that socioeconomic status might be positively related to physical attractiveness. The "correlation of tall stature with the upper social classes and low stature with the low social classes which exists in present civilized societies has also existed in the past and in the most different societies" (Sorokin, 1927:222-3). To say that physical attractiveness might be 'related' or 'associated' with social class can have several different meanings. It can refer, for example, to a situation where significantly more or less individuals with a particular characteristic or feature are to be found in a given social class than what would be expected by chance alone. Consequently, it is of considerable interest to investigate whether there are some specific factors within social class which may be responsible for the possible class differences in terms of attractiveness.

There is substantial evidence for class endogamy (i.e., couples of similar backgrounds are more likely to marry than couples from different backgrounds). At the same time, geneticists and biological anthropologists report evidence for positive assortative marriage and mating for continuous characteristics such as height or IQ. Positive assortative mating refers to the situation in which like preferentially mates with like for some phenotypic characteristic(s). If the characteristics are hereditary, assortative mating can have profound effects on the genetic structure of populations: heterozygosity at those loci responsible for the characteristic will decrease with a concomitant increase in homozygosity (Nicholas Mascie-Taylor, 1990). Because biological factors frequently become

closely entangled with social factors (i.e., good health and appearance) this tends to lead women (men?) to upward social mobility.

There are several writers who suggest that physical attractiveness may reflect patterns of inequality in modern societies (Sorokin, 1927; Elder, 1969, Grabb, 1984; Collins, 1975, 1985). The importance of physical attractiveness, as far as the stratification structure is concerned, was noted by Collins in one of his earlier books:

"The middle and upper classes are usually a good deal more attractive than working and lower classes; they eat better food (and hence avoid obesity and complexion problems of cheaper carbohydrate diets), play more outdoor sports (although the value of sedentary occupation versus hard physical labor is not clear), as well as tend to pick the gene pool by marrying the more attractive women of the lower classes." (1975:280-81)

As hinted by Collins, there is some evidence which points to a greater prevalence of obesity in the lower social classes in highly industrialized societies. For example, even though children of lower social classes tend to have a lower total nutrient intake than higher class children, they consume carbohydrates and added sugar equal to those of the higher social class so that the quality of the lower-class diet is worse (Cook et al., 1973). It would seem that the higher prevalence of obesity in the lower classes begins early and is related to diet. The higher prevalence of obesity in the lower social classes applies only to countries where calorie intake is adequate for all social/income groups. This qualification is due to the fact that in some subsistence societies a plum figure continues to be a sign of health, wealth, and attractiveness.

Any introductory sociology textbook is likely to provide a long list of correlates of social class ranging from psychological adjustment to life expectancy (see Spencer, 1991). After all, one of the features of class societies is that deprivations or rewards in one area of social life are highly associated with deprivations or rewards in other areas (Salaman, 1980). Socio-economic differences in terms of physical attractiveness might be introduced, increased or perpetuated in many different ways by class-related behaviours or advantages such as differences in nutritional and medical care, the amount of time and money devoted to looks or differences in the hair style or dress. But, as indicated by Himsworth (1984), the biological factors determining physical strength and beauty are not traceable to a single gene, but to a constellation of genes, which is too complex to be analyzed by current biological science.

Perhaps not surprisingly an analysis of the survey data collected in 1988 from a cohort of 1,000 youth in Scotland indicated that perceived physical attractiveness was associated with higher household social class, owner-occupied housing, physical maturity, height, clear speech, and not wearing glasses. In addition, females were generally rated more attractive than males, and unlike males, those who were somewhat light for their height were rated more attractive. It was concluded that physically attractive people were perceived to have more socially desirable character traits and that they were apt to perform better (Macintyre and West, 1991).

What we do for a living affects our bodies and our physical appearance in ways which are closely related to our social location (Freund and McGuire, 1991). Elling (1986) reports that approximately 100 000 Americans die each

year of occupational diseases, excluding occupational accidents. There are a total of five million workplace accidents reported in the US each year (Hills, 1987). It comes as no surprise that lower status jobs generally involve more accidents and occupational diseases. This is because it frequently means working in high risk jobs where little control over work safety or the environment can be exercised. Furthermore, it has long been established that unemployment can have detrimental effects on people's physical and mental health. And it, too, is closely related to social class.

While it is probably safe to assume that some of the nutritional and life style differences that characterize various social classes are on the decline their importance should not be discarded as far as physical attractiveness is concerned (see Himsworth [1984] and his analysis of the differences in the infant mortality rates for the various twentieth-century social classes). The following passage, describing the early industrial workers, suggests that, indeed, we have come a long way,

"Anyman who has stood at twelve o'clock at the single narrow doorway, which serves as the place of exit for the hands employed in the great cottonmills, must acknowledge that an uglier set of men and women, of boys and girls, taking them in mass, it would be impossible to congregate in a smaller compass. Their complexion is sallow and pallid - with a peculiar flatness of feature, caused by the want of a proper quantity of adipose substance to cushion out the cheeks. Their stature low - the average height of four hundred men, measured at different times and different places, being five feet six inches. Their limbs, slender, and playing badly and ungracefully. A very general bowing of the legs. Great numbers of girls and women walking lamely or awkwardly, with raised chests and spinal flexures. Nearly all have flat feet, accompanied with a down-tread, differing very widely from the elasticity of action in the foot and ankle, attendant upon perfect formation. Hair thin and straight - many of the men having but little beard, and that in patches of a few hairs, much resembling its growth among the red men of America. A spiritless and dejected air, a sprawling and wide action of the legs, and an appearance, taken as a whole, giving the world but 'little assurance

of a man', or if so, 'most sadly cheated of his fair proportions'" (Gaskell, 1833:124).

Collins notes that similar gulfs in physical appearance between different social strata are striking today in some third world countries such as India (1975:281).

The possibility that the upper social strata can redefine 'beauty' in a manner more favourable to its own members was noted, for example, by Beuf (1990; see also Veblen, [1899] 1973). If 'beauty', at least to a certain degree, is socially constructed then members of the upper classes might not only be more competent with institutionalized modes of decorum but they might also possess "sufficient power to redefine "beauty" in a way more favourable to its own members. For example, in the United States, upper class, thin women are called "svelte" rather than "scrawny" and others are urged to emulate them" (Beuf, 1990:35). Although the idea that the upper classes can redefine 'beauty' sounds somewhat far-fetched it should not be discarded outright. While the upper classes today might be too heterogeneous in terms of physical attractiveness to impose uniform standards on the rest of us, they are likely to be instrumental in the process of creation and dissemination if not of the socially 'appropriate' standards of physical attractiveness then at least of clothing fashions and hairstyles. After all, it is almost inevitably upper strata individuals whose appearances everybody else tries to emulate and not the other way around. This trickle down effect can be seen, for example, in ethnically stratified societies where there is a tendency for the attractiveness standards to be suspiciously similar to those of the dominant ethnic group.

According to Bourdieu (1978, 1984, 1986) and Elias (1983) physical appearance is an unfinished entity which develops in conjunction with various social forces and is integral to the establishment and maintenance of social inequalities. They have both suggested that there is an interrelationship between the development of the body and people's social class, and both view the management of the body as instrumental to the acquisition of status and distinction (Shilling, 1993). It was also suggested by Bourdieu (1978) that the types of physical appearance produced by the lower classes constitute a form of physical capital that has less exchange value when converted into economic, cultural or social capital than that developed by the dominant class.

Dalto (1992) noted that status attainment theory emphasizes the transmission of social status across generations in analyzing how individuals become motivated to pursue vertically differentiated roles. However, the theory does not explain why some people are motivated to pursue occupations or jobs that deal primarily with things versus occupations or jobs that deal primarily with people. Dalto suggested that physical attractiveness is correlated with social class and thus is a genetic endowment transmitted across generations. Through mechanisms such as prejudice, discrimination, and other structured inequalities, physical attractiveness influences an individual's self-image, social relationships, academic performance, and career aspirations. As a result, less attractive people are more likely to pursue occupations that deal primarily with things. More attractive individuals are perceived to be more socially competent, more likely to develop better social skills, and thus are more likely to pursue occupations that deal primarily with people.

Another issue concerns temporal stability of physical attractiveness and its assessment (i.e., *within* individual variations). More specifically, the extent to which physical attractiveness -- and hence its measurement -- might fluctuate over an individual's lifespan. The evidence for stability of physical attractiveness and its assessments over time -- especially by different judges at each time -- is not well documented in the existing literature (but see Langlois, 1986; Pittenger et al., 1989). While Alley (1993) found a significant degree of stability in ratings of facial attractiveness at each of 5 age levels from 5 to 22 years of age, his study must be interpreted with a certain degree of caution as it involved a grand total of 18 photographs of the face (9 males and 9 females) assessed by 100 judges.

It is not unreasonable to speculate that all types of personal events such as illness, promotion, romantic relationships, change of marital status or birth of a child might affect one's appearance or at least the amount of time, money or energy devoted to it. These types of events are particularly likely to be an issue if the time interval between subsequent assessments is long enough to allow them to take its toll. Furthermore, given the strong link between youth and beauty in our culture, aging and its effect on physical attractiveness should be also considered. The effect of aging on attractiveness might be contextualized differently for men and women (Freedman, 1986; Melamed, 1983), attractive and unattractive individuals or people who are attached or single. There is some evidence that aging has more negative effects on perceptions of females than of males. Older males are perceived as more conscientious and responsible (Bell, 1979; Nowak, 1977) and mature facial features in males (i.e., thick eyebrows, small eyes, thin lips, square jaw) are associated with higher ratings of attractiveness and status (Cunningham et al., 1990; Keating, 1985).

It is no secret that aging makes almost everyone unattractive -- or at least perceived as such -- as they get old enough (Berman, O'Nan and Floyd, 1981; Mathes, Brennan and Rice, 1985). There is also evidence that many characteristics attributed to the unattractive are similar to those attributed to the elderly (Johnson and Pittenger, 1984). It can be argued, therefore, that aging might act as an 'equalizer' as far as some of the possible advantages or disadvantages associated with physical attractiveness are concerned. The degree of 'equalization' attributable to aging would largely depend on how permanent, how profound and how decisive the effects based on physical attractiveness were to begin with. Aging may well have a positive impact on the less attractive and negative impact on the more attractive individuals while being largely indifferent for those who were average looking most of their lives.

This is how George Eliot described one of the characters in *Daniel Deronda*,

"She was one of those women who are never handsome till they are old, and she had the wisdom to embrace the beauty of age as early as possible. What might have seemed harshness in her features when she was young, had turned now into a satisfactory strength of form and expression which defied wrinkles, and was set off by a crown of white hair; her well-built figure was well covered with black drapery, her ears and neck comfortably caressed with lace, showing none of those withered spaces which one would think it a pitiable condition of poverty to expose" (1988 [1876]: 497).

This short passage suggests, for example, that the normally hypothesized relationship between physical attractiveness and, say, psychological adjustment or self-esteem might be considerably altered by the aging process. This variability of physical attractiveness due to aging should also be taken into consideration when theorizing and estimating the possible effects of physical attractiveness on economic success in the labour market. If attractiveness is not

a very stable characteristics of an individual then it may be necessary to further distinguish -- at least conceptually -- between the short-term and long-term effects of attractiveness on economic success.

**"He [Aristotle] used to say that personal beauty was a better introduction than any letter."
Diogenes Laertius, *The Lives and Opinions of the Eminent Philosophers***

B. BEAUTY IN THE WORK CONTEXT

It is also important to reflect on the type(s) of attractiveness that employers are likely to find desirable/undesirable within the labour market context and hence willing/compelled to reward differently and for what reasons (productivity versus discrimination). Although the labour market is frequently portrayed, at least by economists, as a monolithic structure where various economic 'laws' reign supreme, the reality is likely to be somewhat more complex. For example, discriminating on the basis of physical attractiveness may well be economically rational while, at the same time, normatively unacceptable. As stated earlier, the functional relevance of physical attractiveness within different sectors of the economy or occupations might also vary considerably. Furthermore, even in those occupations or jobs where physical attractiveness might be deemed important, the actual types of beauty perceived as the most 'appropriate' are not likely to be uniform.

A study by Salomon et al. (1992) proposed and tested the beauty match-up hypothesis. First, they hypothesized that there were multiple types of physical attractiveness and second, that these specific types would be seen as more or less suitable for certain products when paired in advertising. Their analysis revealed that photos of professional fashion models sorted by female fashion editors at major women's magazines resulted in six distinctive types of good looks. That is, even at a very high overall level of attractiveness further distinctions are not only possible but, indeed, are also likely to be made. Models

whose type of physical attractiveness was perceived as more congruent with the advertised product (brand of perfumes) and with the targeted audience (readership of a magazine) were picked presumably because the more appropriate 'matches' would result in a more effective advertising campaign and thus bigger 'bang for the buck'. Needless to say, these three-way interactions would likely have real life implications in terms of models that were actually hired and how much they were paid.

Another study (Kamins, 1990) tested the attractiveness aspect of the match-up hypothesis of celebrity/product congruence. It hypothesized that the physical attractiveness of a celebrity endorser may only enhance product- and ad-based evaluations if the product's characteristics match up with the image conveyed by the celebrity. It concluded that, for an attractiveness-related product, use of a physically attractive celebrity significantly enhanced measures of spokesperson credibility and attitude toward an ad, relative to use of a physically unattractive celebrity. By contrast, the physically attractive celebrity had no effect on various spokesperson-, product- and ad-based dependent measures relative to the physically unattractive celebrity when the product in question was not attractiveness-related.

The "matching hypothesis" was first suggested by Goffman who argued that "a proposal of marriage in our society tends to be a way in which a man sums up his social attributes and suggests to a woman that hers are not so much better as to preclude a merger or a partnership in these matters" (1952:456). The subsequent research by Walster et al. (1966) which was designed to test the "matching" hypothesis, a "computer dance" experiment, revealed that physical attractiveness was the only determinant of how much

each person liked his or her partner. "Every effort to find additional factors which might possibly predict attraction failed. Students with exceptional social skills and intelligence levels, for example, were not liked any better than those less fortunately endowed" (Berscheid and Walster, 1974:160-61).

The evidence that the match-up principle operates, at least as far as romantic or sexual relations are concerned, is quite substantial (see Feingold's 1988 metanalytic review of the research testing the matching hypothesis). Furthermore, the centrality of physical attractiveness in those relations is staggering. As noted by Darwin (1871) "In civilized life, man is largely, but by no means exclusively, influenced in the choice of his wife by external appearance". The occasional, and frequently well publicized mismatches, can be usually successfully accounted for in terms of various trade-offs or arrangements. One of the frequently cited, and empirically supported trade-offs, involves the 'rich man, beautiful woman' transaction (Elder, 1969; Epstein and Guttman, 1984). But, as noted by Collins, the possible trade-offs need not to be so straightforward or immediately visible. "A highly secure (and erotically or economically) attractive person can profit from a 'mismatch' to a less attractive person, by demanding greater subservience from him or her as the price of staying. The relative chances each one has for making a better match elsewhere will determine the domestic balance of power" (Collins, 1975:253). Alternatively, mismatched relationships can be terminated or more equitable partnerships re-negotiated as evidenced by rising divorce rates, serial monogamy, and the popularity of common law unions. Alternatively, it was also suggested that the high degree of matching found among long-married couples might be due to convergence in attractiveness (Price and Vandenberg, 1979; Zajonc et al., 1987).

Virtually all people can eventually arrive at more or less mutually satisfactory 'matches' or 'exchanges' in their marriages or relationships and this suggests that the same principle might apply as far as labour market relations are concerned. It is also plausible to suggest that similar trade-offs and arrangements to those found in marriages might help to account for various 'mismatches' or 'discrepancies'. The 'job-shopping' of young workers who try out different jobs to learn about the market and their own skills (Pencavel, 1972; Johnson, 1978) before they settle into jobs that match their tastes and abilities might really be not much different from the dating phase that normally precedes tying the knot. The existing research indicates that attractive people do have better marriages (Margolin and White, 1987) but do they also have better jobs?

It is worth noting striking similarities between 'partner-shopping' and 'job-shopping' in modern societies as aptly demonstrated by the following passage:

"Pretty much everyone today has to find their own partner. This involves a good deal of uncertainty. In the process of meeting various people to find out whether you like them, you may have many negative experiences as well. A man may pick out especially beautiful or sexy women only to find they are not interested in him. And why should they be? They are too busy fending off all sorts of attentions, and unless this particular guy has something special to offer, they have no reason to notice him. A woman goes through similar processes on her side: setting her sights too high, or being stuck in a situation where she meets few desirable men, and so on." (Collins, 1992:128).

Theoretically, a large number of characteristics and attributes such as mutual respect, kindness, child rearing or cooking skills, various aspects of personality, social class, ethnicity, religion, level of education and so on might be reasonably expected to be relevant considerations in the mate selection process. In the work context the list of possible traits or skills which might be deemed as desirable or 'appropriate' in a given job is probably equally

impressive. Selection of a spouse or a partner and choice of an occupation or a career are probably the two single most important aspects of our lives and neither of them appears on the surface to be simple or uni-dimensional. The fact that physical attractiveness is so instrumental in the mate selection process -- despite the fact that other characteristics would seem from the rational standpoint to be more or at least equally important -- suggests that perhaps we should also seriously consider its relevance in the labour market.

Collins, one of the handful of sociologists who devoted some attention to physical attractiveness, argued that it is an important personal resource not only in mate selection but also in the job market. He suggested that,

"Women who are highly attractive and not very talented or ambitious would no doubt find it to their greatest advantage to play the conventional female role, and make their worldly success through marriage or the dating market. Conversely, talented and active women would attempt to break the sex-role mold and find occupational success. Unattractive women might be more motivated in this direction initially, but attractive ones have additional resources for occupational success" (1975:250).

It was also suggested by Collins (1975) that unattractive individuals of both sexes, all else being equal, may be particularly motivated toward the establishment of a lasting formal contract because of their weak market position. First, because they may have more difficulties attracting other people (e.g., 'attractiveness pecking order'). And second, because like everybody else they need the companionship and the sex. Once again, it is possible to hypothesize -- and verify empirically -- whether similar mechanisms might be at work within the labour market (i.e., 'implicit labour contracts' and physical attractiveness).

As noted by Rodeheaver (1990), one of the gender differences based in physical attractiveness is derived from the possibility that the 'life expectancy of presentability' among working women is shorter than it is among men, creating an accelerated aging process, or what he termed "labour market progeria". This might suggest, for example, that the returns derived from physical attractiveness at the onset of one's professional career might be similar for both genders but that they might be of shorter duration and hence of lesser life-long magnitude for women than for men. These examples suggest that social standards of attractiveness might enter the work place in many subtle ways when combined with age and sex discrimination.

It is worth pointing out that various firms, organizations, companies and public figures (e.g., politicians, actors) are also involved in impression management activities and strategies of their own. In fact, the amount of resources and sophistication devoted to these activities surpasses by far what any average individual worker can afford or undertake. The existence of public relations, marketing and advertising departments within many companies or the hiring of outside specialists and consultants clearly indicates that the corporate image is not something to be taken lightly. Companies and their products and services, not unlike individual workers, are also involved in projecting, maintaining or altering their images. Different companies or firms might want to be seen by the consumers, their employees or competitors as dynamic, young, sexy, trustworthy, conservative, responsible, environment-friendly, and so forth. Nobody, including large multinationals, can afford -- in the long run -- too much dissonance between the image that they or their products attempt to convey and the reality. For example, some of the companies that jumped on the ecological bandwagon realized rather quickly that they had to deliver on their 'ecological

concerns' or their market credibility and ultimately their market survival would be at stake. This is what a script producer at a large advertising agency told Studs Terkel about her job, "it's such a young business, not just the consumer part. It's young in terms of appearances. The client expects agency people, especially on the creative end, to dress a certain way, to be very fashionable" (1972:110).

While some of the image control is likely to be accomplished *via* front-stage and back stage performances (Goffman, 1969) and shuffling of the performers as well as good PR control, there is certainly room for development of corporation-specific standards of physical attractiveness and the reward system that goes along with them. For those less endowed by nature or those beyond the miracles of the beauty industry not all is lost even in those occupations where certain types of appearance are at a premium. They can settle for lower wages, less glamorous assignments, lower their prospects for advancement or arrive at other mutually satisfactory arrangements (cf. Frank, 1985, and his notion of 'local status' as one of the possible mechanisms). In many occupations they can also successfully trade off their deficiencies in terms of attractiveness for other job-related characteristics. These different trade offs will largely depend on the relative importance of looks vis-à-vis the importance of other characteristics or skills deemed as relevant and their relative exchangeability.

In those occupations where physical attractiveness is either indispensable or very important the possibilities for trade offs will be either nonexistent or minimal. One might also expect average level of attractiveness in those occupations to be high. Fortunately -- for most of us -- there are not many occupations of that type (e.g., models). It is interesting to note, however, that

even among professional models further differentiation (i.e., 'super models') in terms of physical attractiveness are possible and, presumably because of it, not all models can command similar salaries. This is of course an example of earnings differentials based on looks in a looks-based industry. One might ask, of course, why relatively less attractive individuals would pursue such careers? It may well be, for example, that being a badly paid model still beats being a well paid secretary or labourer or that non-monetary rewards or opportunities offered by these occupations constitute powerful motivating factors for some individuals (cf. Wesolowski, 1969; see also the notion of 'compensating differentials' [Filer, 1985]). In those occupations where physical attractiveness is viewed as one of several relevant traits or skills it may be possible to substitute physical attractiveness with other skills or characteristics. For those who are fortunate enough to have the right 'look' -- all else being equal -- physical attractiveness will clearly constitute a value-added characteristic.

It is for the above outlined reasons that there is a need to examine more closely the issue of how well-publicized and accepted the definitions of "unattractive" or "beautiful" are in our society in general and within the labour market in particular. While development of the mass media, particularly the visual ones, permits the rapid and nearly total dissemination of a very specific concept of "good appearance" and its violation, it is not at all clear whether there is a sufficient degree of consensus on this issue to generate stable and consistent income differences based on looks. There are probably not many people, at least in the West, who could honestly say that Kim Basinger, Mel Gibson or Claudia Schiffer are not physically attractive. Whether this is due to socialization, marketing, or some other evil force is difficult to say. One can probably anticipate a similar level of consensus at the other end of the

attractiveness spectrum. The high level of consensus likely to be found at these two extremes probably cuts across racial, gender or age boundaries as well as across different social or occupational roles. The vast majority of people, however, are to be found somewhere in between these two extremes and it is the consensus, or lack of it, in those middle ranges that matters when it comes to examining income differentials based on looks.

"Every empirical indicator has some defects; all could be improved upon, and the search for better indicators is an endless one."

Earl Babbie, *The Practice of Social Research*

C. MEASUREMENT OF PHYSICAL ATTRACTIVENESS

Reliability

The measurement of physical attractiveness developed slowly, in part because physical attractiveness is essentially not a quantitative, easily measurable trait utilizing conventional procedures or instruments, and in part because most social scientists elected to ignore studying the social relevance of physical attractiveness and thus hindered development of its measurement. As an abstract and highly subjective dimension, physical attractiveness is commonly thought to be so unique that reliable and valid measurement of it is not possible. It is important to stress from the outset, however, that just because a particular measure is subjective it does not automatically follow that it is not reliable or valid. It is theoretically and empirically possible to have indicators which, for example, are objective but not reliable, reliable but not valid, or valid but not reliable. The main measurement issue involves the extent to which a particular empirical indicator represents a given theoretical concept, regardless of how it was assessed.

Measurement and its reliability focuses on the crucial relationship between the empirically grounded indicator - that is, the observable response - and the underlying unobservable concept. In practice, the reliability of a measure is assessed *via* the correlation of scores on parallel forms of a test, through repeated measurement on the same sample (provided no change in true scores can be assumed *a priori*), or by more complex modeling procedures

(see Wiley and Wiley, 1971). In reliability assessment, interobserver agreement deserves special attention because it is a *prima facie* requirement. It concerns the intrinsic quality of the elementary datum: if two (or more) judges cannot agree, all other reliability considerations, such as internal consistency or temporal stability, become considerably less relevant. This characteristic is typical of a large class of data relying on human judgment. Thus, assessment of this aspect of reliability of physical attractiveness is crucial and the choice of an appropriate methodology and data is of prime importance.

One of the most popular methods of establishing measure reliability is to correlate the measures obtained at two or more different points in time. Variables subjected to this type of analysis should ideally approach perfect correlations. If the variable in question has not changed between different periods of measurement, the scores should also not change. However, if the interval between subsequent measurements is long enough and the characteristic or trait that is being measured likely to vary over time there is a need to contemplate how much of the variation can be attributed to the 'true' change and how much to the 'measurement error'. The extent to which changes in the assessment of physical attractiveness over time can be predicted from various personal factors or events (e.g., aging, sickness) might provide an indication as to the amount of variation in physical appearance ratings attributable to actual changes in physical attractiveness. The 'unexplained' portion of the variation might be then attributed either to the measurement error or inter-judge variability, either of which might or might not be distributed randomly.

The standard method of measuring physical attractiveness in most attractiveness studies is to have 'pretest judges' evaluate a group of photographs, videos or live subjects preselected by the investigator, on a 3, 5 or 7 point Likert-type scale. Ratings from each judge are summed and subjects are chosen either to reflect a specific number of attractiveness conditions or the rating of attractiveness, reflecting the average (mean) score across all judges, is calculated for each subject. The truth-of-consensus method used in those studies is based on the assumption that, "if a substantial number of judges rate a stimulus person as high or low in physical attractiveness, then, for research purposes this stimulus person is interpreted as representative of that respective level of physical attractiveness" (Patzner, 1985:17). Furthermore, it is argued that "because no absolute measure of physical attractiveness exists, the judgments by strangers is logically the true measure. It is then reasonable to assume that judgments by strangers yield an objective impartial measure" (1985:25).

This approach and its assumptions are quite distinct from how physical attractiveness was assessed in a few broad household surveys where both physical appearance and the usual labour-market and socio-demographic variables that would be of interest to sociologists or economists were collected. In the Canadian Quality of Life Survey (see the Quality of Employment Survey, 1977; the Quality of American Life Survey, 1971), for example, attractiveness was measured by means of rating, by the interviewer, of the respondent's physical appearance towards the end of a long face-to-face interview conducted in the respondent's home. By contrast, in a few social psychological studies that utilized the interview method to assess physical attractiveness, a single judge, the interviewer, rated subjects before an interview.

The face-to-face, intimate interaction between the interviewer and the respondent clearly presents other aspects of a person which might be relevant to assessment of physical attractiveness but which are not apparent in photographs or measurement procedures used in more 'controlled' settings. Non-verbal cues, vocal attractiveness, grooming, height and weight, or attitudes and beliefs revealed during the interview itself would tend to become salient and may influence the assessment of physical attractiveness. An analysis by Umberson and Hughes (1987) of Campbell's large-sample survey research (The Quality of American Life, n=3692) found, for example, significant and monotonic associations between interviewer-rated physical attractiveness and a wide range of variables. However, the physical attractiveness ratings were made after the interview, and Campbell noted that interviewers had reported that they were unable to make unbiased judgments of respondents' physical attractiveness.

Validity

These issues relate to a second major consideration surrounding measurement, that is, validity. Namely, does the rating of physical appearance utilized in most studies really assess attractiveness in a meaningful and intended way? In other words, having demonstrated that a measure is reproducible -- or not -- it remains to be shown that it is measuring adequately what it is intended to measure. Sometimes this is straightforward and non controversial. For example, to show that a mercury manometer is in fact measuring blood pressure, one might compare blood pressure values obtained this way with direct measures of arterial blood pressure. Sometimes the situation is not so straightforward and ratings of physical appearance are likely to fall in the latter category. One way of demonstrating validity is to argue that a

variable in question measures the trait **X** because trait **X** is what it measures (i.e., face validity), an argument that is invoked in a variety of forms, for example, for the measurement of intelligence.

Construct validity is frequently invoked when no other established measure to compare it with exists. Instead of testing the relationship between the new measure and some other measure of the same thing, a theoretical construct that describes the relationship between the attribute under scrutiny and other attributes is invoked. Then the relation between these two measures is examined, and if it is in the expected direction and magnitude, it provides some evidence that both the measure and the hypothetical construct were right. It is important to stress, however, that if there is no relationship between the two measures, there is no way of determining whether the measure or the theory were wrong. In all likelihood, some hypotheses will be right and some will be wrong. Consequently, the judgment of validity largely depends on the weight of the evidence being in the expected direction and anticipated magnitude.

As mentioned earlier, criterion validity is the strongest approach to validity assessment and it involves comparison with a 'gold standard'. In turn, this type of validity is further divided into concurrent and predictive validity. Of course, in case of physical appearance, there is no 'gold standard' that one could rely on. The concerns highlighted in the above paragraphs have some important implications for issues related to the measurement of physical attractiveness -- its reliability and validity -- and how they might have affected our understanding of physical attractiveness phenomena. If the relationship between concepts and indicators is weak or faulty our research is likely to generate incorrect inferences and misleading conclusions. As noted by Carmines and Zeller, "the auxiliary

theory specifying the relationship between concepts and indicators is equally important to social research as the substantive theory linking concepts to one another" (1979:10-11).

Berscheid and Walster noted that, it is irrelevant "whether it was a dimple on the chin which the judges were responding to" (1974:181) or some other singular characteristic or feature because what really matters is whether the judges are able to agree that a particular person is representative of a given attractiveness level or not. This approach to attractiveness and its assessment assumes that attractiveness is independent of the social role or setting. More specifically, that once a particular person was judged to be representative of a given attractiveness level his/her attractiveness will remain constant and equally valid across all social roles or settings.

The issue of validity is complicated by the fact that the vast majority of studies conducted in this area measured physical attractiveness either in an explicitly/implicitly sexual context or in what can be termed a 'social vacuum'. The explicit sexual context of physical attractiveness assessment is self-evident in the inter-personal attraction studies involving preferences concerning dating, marriage, or sexual partners. It is also likely to be implicitly present when the social context or the incumbent's social role is not clearly specified, as is often the case. It can be further speculated that even in those studies that were conducted in a 'social vacuum' judges were probably influenced by a natural tendency to view physical attractiveness and hence its assessment in a sexual context. This tendency is to be expected whenever social context or social role are not explicitly specified. Finally, because many studies conducted in this area utilized undergraduate psychology majors as both subjects and judges, they

have probably inadvertently introduced heavy, age-related sexual overtones to the assessment of physical attractiveness.

This brings the question of whether physical attractiveness always has sexual connotations, whether it exists as a distinct characteristic largely independent of sexual attraction and social context, or whether it varies depending on the social role to be performed by the incumbent or its setting. The answer to these questions has considerable implications for how one should go about measuring physical attractiveness. Moreover, it has implications for how it was measured thus far in most physical attractiveness studies. If one accepts that physical attractiveness is role specific then it logically follows that the measurement of it should be as well. In the present case we need to contemplate whether the types of attractiveness which might be relevant within the labour market are largely context-free or whether they are likely to be associated with the role or occupation to be performed. If the latter alternative applies -- which we strongly suspect might be the case -- then meaningful assessments of physical appearance must be explicitly occupation or task-specific.

Different occupational or social roles might not only have different requirements concerning the level of physical attractiveness but are also likely to call for different or more 'appropriate' types of attractiveness. What is beautiful and sincere is not necessarily the same as what is beautiful and friendly or beautiful and polite. By the same token, what is considered to be very handsome or beautiful in academia might be considered barely average in sales or advertising. It is also important to contemplate whether the workers, potential applicants, customers or employers are in fact aware of the existence

of these occupation or task-specific standards of attractiveness and whether occupation-specific attractiveness can be assessed in a reliable and valid fashion.

There is a price to be paid for 'uncontaminated' (i.e., based on pictures of head and shoulders) assessment of physical attractiveness. First, because it may not be even vaguely related to how physical attractiveness is perceived and interpreted in most social settings. This is evidenced, for example, by the fact that the image that we want or are expected to convey would largely depend on the context or the role that we happen or are expected to be playing. This role playing, in order to be credible, is likely to go much deeper than the clothes we wear and it may include an appropriate body language, ability to express (or fake) various emotions, and so on (see Hochschild, 1983; on 'surface' and 'deep acting') . Second, because photographs of the face are not likely to be a very close approximation of how people present themselves or are seen by the outside world. This is not simply because some people might be more photogenic than others but because there are very few social settings or social roles that don't involve 'live' encounters. It is also worth pointing out that many of us can just as easily and correctly infer from photographs various information that might 'contaminate' our ratings of attractiveness such as, for example, social class or ethnicity (Mazur, 1993; but see Udry and Eckland, 1984 for a more general discussion of situational contamination in measures of physical attractiveness). Finally, because the availability of other relevant information that is normally present along with -- and an integral part of -- physical appearance is artificially restricted (e.g., height, voice, body language, etc.). This might result in ratings which are reliable, as indicated by inter-judge

agreement, but not necessarily valid when applied to the real world social roles or settings.

Phillips and Smith (1992) demonstrated that clothing is a significant form of nonverbal communication that affects the perceptions of others. Children in fourth, seventh, and ninth grades were shown three photographs of a female model (teacher) in casual, moderate, and conservative dress. The results indicated that students' perceptions of teacher attributes were affected by teacher attire. Casual clothing was perceived by students to convey teacher friendliness, fairness, and interestingness. Moderate attire conveyed teacher friendliness, organization, interestingness, understanding, and discipline. Conservative dress elicited perceptions of teacher organization, knowledge, and disciplinary skills. Another study demonstrated that complete strangers were able to make fairly accurate judgments as to the intelligence of the subjects when video recordings with a soundtrack were available (Borkenau, 1993).

As noted by Schlenker, face-to-face interactions contain large amounts of information relevant to perceived attractiveness which cannot be depicted by photographs alone,

"We see the look in their eyes, the expression in their faces, the way their bodies lean, how closely they are willing to approach, the way they sit, the tenseness or relaxedness of their gestures. We hear the tones of their voices and the speed of their speech. We may not even be conscious at the time of the impact this information has on our overall impression, but there is no doubt that it plays a major role in shaping our views of others" (1980:234-235).

There is some evidence that ratings of static targets or photos and ratings of dynamic targets or video tapes tend to produce relatively high correlations

(Brown, Cash and Noles, 1986; Smith, 1985). However, this might be due to the fact that attractiveness research typically compares people representative of high and low levels of attractiveness and thus artificially inflates the inter-judge agreement. A high degree of consensus, similar to the earlier hypothesized agreement concerning attractiveness of Claudia Schiffer or Mel Gibson, might be due to a natural tendency for the level of agreement to increase as one moves closer to either of the extremes. While consensus concerning attractiveness might be higher at extreme ranges it is also plausible that, instead of generating the effects consistent with the 'halo' and the 'horns' effects, extreme levels of attractiveness might induce jealousy, at one extreme; and pity, at the other. This also raises an issue of whether the effects of attractiveness reported in most studies are primarily attributable to high, low, or to both levels of attractiveness and what are the consequences of being 'average-looking'.

Some of the misconceptions surrounding physical attractiveness are probably related to the nomenclature which is used to conceptualize and operationalize this variable in different studies. It is not at all clear -- depending on the design, sample and procedures used -- whether what was measured in some studies should be really called physical attractiveness and not 'sexual attractiveness', 'social attractiveness', 'social presentability', 'social similarity', 'physical appearance' or 'impression management skills'. While many of these concepts overlap to a considerable degree they should not be used -- or measured -- interchangeably. The fact that what was assessed in many studies was then called by the investigators 'physical attractiveness' does not automatically suggest that physical attractiveness was actually measured. That

would largely depend on the quality of training and instructions given to the raters, the type of targets used or the context of a given study itself.

It can be argued, given that the interviews in the Canadian Quality of Life and other broadly based surveys were conducted face-to-face and in the respondents' homes, that the interviewers have crossed the line of stranger versus non-stranger. Given the intimate nature and the scope of the questions contained in such surveys the interviewers have probably learned, by the end of the interview, as much, if not more about the respondent than his/her close friends or co-workers are likely to ever know. This aspect of how physical attractiveness was assessed creates certain problems as research results consistently show that physical attractiveness measures are affected by the familiarity level of participants (Patzner, 1985:21-41). In other words, the better we know someone or the more we know about them, the more 'biased' is our evaluation of their physical attractiveness relative to judgments by total strangers.

Assuming that the interviewers have, indeed, crossed the line of stranger versus non-stranger one needs to consider what kind of bias, if any, might have been thereby introduced to the assessment of physical attractiveness. More specifically, whether this bias is likely to be random or systematic and whether it is any different from the kind of bias that is likely to characterize perception of physical attractiveness in most social settings. Employers and colleagues, who have a determining influence on the career of workers, often become anything but strangers to these co-workers over time. In other words, physical attractiveness as seen by regular associates of a worker may, after a while,

come to have little to do with 'physical attractiveness' as perceived by total strangers.

In that sense, ratings of physical appearance conducted after a live interaction might approximate more closely the assessment of this variable in real world settings, biases included. That is, the interviewers might have been influenced in their judgments of physical appearance by the content of the interview or the impression management strategies utilized by the respondents. Of course this kind of 'influence' is likely to be present in virtually all social interactions. As Goffman has shown us, there are innumerable small rituals in everyday life in which people act out a particular image of themselves and attempt to get other people to accept that image. There is no reason to believe that just because the respondents were part of a study they have suspended all the impression management 'activities' or that these 'activities' were any different from those normally utilized elsewhere.

In many respects a job interview -- which is the criterion for hiring decisions -- can be viewed as approximating the type of interview that was conducted in the CQL survey. Both involve a face-to-face interview during which a variety of information is disclosed and where various impression management techniques are utilized. Inevitably, some people are better at it, some have more props, and some props are better than others. The measurement of physical attractiveness by either of these methodologies (photos or videos versus face-to-face interview) has its problems and the ratings generated by them are not ideal to assess how physical attractiveness is actually perceived and interpreted in real world settings. Having said that, we should also recognize that the measurement difficulties associated with this variable are by no means unique.

The operationalization and measurement of many concepts routinely studied in social sciences such as 'political efficacy', 'social class' or 'religiosity' are at least as much, if not more, problematic as those encountered in the research of physical attractiveness. The fact that operationalization and measurement of physical attractiveness introduces certain conceptual and methodological challenges does not imply that we should abandon our research or discredit the evidence thus far generated and hence ignore the possible relevance of this variable in our society.

In most population-based surveys such as the CQL the data on virtually all variables is self-reported and almost never objectively and independently verified or validated. One can easily speculate why, for example, some individuals might have elected to over- or under-report their annual earnings, level of education, number of close friends or age. This is not to discredit survey research but simply to illustrate that while perfect indicators may exist theoretically they almost never do empirically. It is hoped that by explicitly stating some of the measurement issues associated with physical attractiveness -- instead of sweeping them under the carpet -- we will be able either to address them with our data or to incorporate and adjust accordingly our interpretations of the results and conclusions.

Self-assessed attractiveness

The available research also indicates the inability of the self-report technique to assess physical attractiveness (Downes and Wright, 1982). A recent meta-analytic review of physical attractiveness phenomena reported that in 21 studies where correlation between self-rated and judge-rated physical attractiveness was assessed "the weighted mean correlations between the two

attractiveness ratings were .24, .25, and .24 for the male, female, and all samples, respectively" (Feingold, 1992:318; Feingold, 1988). This should be expected if we consider the high value placed on physical attractiveness in our society but it also raises several interesting issues.

These correlation coefficients, their direction and magnitude, are interesting for a number of reasons that go beyond measurement reliability itself. First, all these correlations are positive and of similar magnitude for both sexes. Assuming for a moment that ratings by others represent an 'objective' measure of physical attractiveness, the amount of variance explained by self-assessed attractiveness is minuscule (r^2 of around 5%). By and large, more attractive individuals tend to have somewhat higher scores but the magnitude of this association is surprisingly low. This might suggest, for example, that there is a large number of people who have either serious misconceptions as to how they are perceived, or who know how they are perceived but who have elected either to over- or under-estimate their 'true' level of attractiveness. There is no indication that people systematically over-estimate their attractiveness. If that was the case, the correlation coefficients would be much higher. The one thousand dollars question is: who is over- or under-estimating, why and in what direction?

This discrepancy in ratings of attractiveness has some important conceptual implications. Tolstoy wrote, for example, that "nothing has so marked an influence on the direction of man's mind as his appearance, and not his appearance itself, so much as his conviction that it is attractive or unattractive." It can be speculated, for example, that the effects of physical attractiveness for some of the outcomes studied might be derived first and foremost from how we

see ourselves while some other outcomes may derive from how we are seen by others. This possibility becomes an issue precisely because of the largely orthogonal relation between the two measurement methods. It also raises a question of whether the concept of self-fulfilling prophecy can be successfully applied to the attractiveness stereotype. This is because both expectations that others have about us and our own expectations about ourselves are equally likely to generate self-fulfilling prophecies (cf., Feingold, 1992; Collins, 1975) and it is not clear which expectations might be more relevant. It is also worth contemplating the extent to which possible wage differences based on physical attractiveness might be derived from how others see us, how we see ourselves or the interplay between these two perceptions and whether different theories are needed to account for them (cf. Feingold, 1992).

Measurement of attractiveness

It is interesting to note that social psychologic literature frequently refers to physical attractiveness assessed by others as 'objective physical attractiveness' and to the self-assessed attractiveness as 'subjective physical attractiveness'. Over the years, there were several more or less successful attempts designed to translate ratings of physical attractiveness into a more dependable and 'objective', at least from an empirical standpoint, measure of physical attractiveness. The least controversial involved the inclusion of weight and height or the Body Mass Index used as an indication of whether the person is over- or under-weight (Good, Olson and Frieze, 1986). Research conducted according to the sociobiological perspective has found that human attractiveness often correlates closely with the size and placement of facial features which can be measured using anthropometric methodology (Cunningham, 1986; Cunningham et al., 1990). Other methods involved

measures of waist-to-hip ratio or facial symmetry (Langlois and Roggman, 1990; Singh and Suwardi, 1995; Singh, 1995, 1994, 1993; Grammer and Thornhill, 1994).

The methodological tools presently available could also considerably improve our measurement of this variable if only more imagination was employed at various stages of the research design and data collection. Usage of more judges, use of visual analog scales, standardized methodologies (e.g., attractiveness rated in relationship to some *a priori* agreed 'prototypes' of different levels and types of attractiveness), explicit identification of the social role or context as well as gathering information on characteristics such as colour of the hair, weight and height, neatness of dress, or body type could also greatly enhance our measurement of this variable (i.e., through multi-dimensional indicators) and thus provide a better understanding of the attractiveness phenomenon.

The existing research indicates that a judgment of physical attractiveness is affected by the characteristics of the stimuli rather than by those of the beholder (Kowner and Ogawa, 1995). This is in line with some earlier research which suggested that gender and other characteristics of the judges were unlikely to result in significant differences as far as the rating of the respondent's attractiveness was concerned (see, for example, Berscheid et al., 1971; Baker and Churchill, 1977; Maret, 1983; Burns and Farina, 1987; Lynn and Bolig, 1985; Pittenger, Mark and Johnson, 1989). Jackson et al. (1995) estimated, as part of their meta-analysis examining the relationship between attractiveness and intellectual competence, whether the effects of attractiveness on perceived competence depended on whether the attractiveness was rated by female or

male raters only. They concluded that attractiveness had an almost identical, moderately strong effect regardless of the rater's gender. There is some indication, however, that experimental manipulation of social roles, settings or props (e.g., homosexuality, feminism, criminal behaviour, cigarette smoking, make-up, weight, wearing glasses, smiling, etc.) can influence judgments of physical attractiveness (Innala and Ernulf, 1994; Unger, Hilderbrand and Madar, 1982; Jacobson and Koch, 1978; Dew, 1984; Clark, Klesges and Neimeyer, 1992; Saladin, Saper and Breen, 1988; Reis et al., 1990).

We should keep in mind that the CQL -- like most large population based surveys of this type -- asked several hundred questions covering virtually every aspect of the respondents' lives. Consequently, it is very hard to speculate which aspect(s) of the interview, and for which interviewers, might have influenced, and in what ways, how they have rated the respondents in terms of physical appearance. It is not unreasonable to assume that different interviewers were affected differently and by different aspects of the interview such as the respondent's education, ethnicity, sincerity, political views, general life satisfaction, values or aspirations.

Despite the popular wisdom that 'beauty is in the eye of the beholder' most studies have found that there is considerable consensus on who is, and who is not, attractive. One should keep in mind, however, that many studies conducted in the area of physical attractiveness utilized ratings based on photos (i.e., face and shoulders) or videotapes of the subjects, that frequently only attractive and unattractive targets were used, and that both raters and subjects tended to be homogenous in terms of age and social class (i.e., undergraduate psychology students).

Inter-rater agreement represents the extent to which different judges tend to make exactly the same rating about the target's attractiveness while inter-rater reliability represents the degree to which the ratings of attractiveness made by different judges are proportional when expressed as deviations from their means. It is the latter approach (i.e., by means of Cronbach's alphas) which is commonly used in this literature. Strictly speaking, this is not a measure of agreement but a measure of interrater reliability (proportional agreement). As such, it is a function of the average (mean) interrater correlation and the number of raters used. Table below (Table 1.1; adapted from Carmines and Zeller, 1979:46) shows the relationship between the mean interrater correlation, the number of raters used and the corresponding changes to the coefficient of reliability (Cronbach's alpha). This example shows that the coefficient of reliability will increase whenever more raters are used under the assumption of stable average interrater correlations. In other words, with sufficiently large number of raters, even substantively negligible interrater correlations (e.g., $r < .2$) would generate 'acceptable' levels of agreement.

Kaats and Davis (1970) reported an interrater correlation coefficient of $r = 0.79$ ($\alpha = 0.88$; $n = 80$) for two researchers rating attractiveness of female college students. Curran and Lippold (1975), using six judges, reported an average interjudge correlation of $r = 0.60$ ($\alpha = 0.90$; $n = 98$). Adams and Read (1983), Farina et al. (1977), Kowner and Ogawa (1995) and a large number of others have all found reliabilities ranging from .72 to .98. Feingold conducted meta-analysis of reliability coefficients of physical attractiveness ratings (63 studies) and he reported that "the weighted average of the interrater reliability coefficients (i.e., mean interrater correlation) was .54, and the corresponding average composite reliability was .83 ($n=8,102$)" (1992:313).

Table 1.1 Values of Cronbach's alpha^a for various combinations of different number of raters and different average interrater correlations

No. of raters	Average (mean) interrater correlation (r)					
	.0	.2	.4	.6	.8	1.0
2	.000	.333	.572	.750	.889	1.000
4	.000	.500	.727	.857	.941	1.000
6	.000	.600	.800	.900	.960	1.000
8	.000	.666	.842	.924	.970	1.000
10	.000	.714	.870	.938	.976	1.000

^a $\alpha = Np/[1 + p(N - 1)]$ where N is equal to the number of raters and p is equal to the mean interrater correlation

Despite the fact that at least two different studies (Roszell, Kennedy, Grabb, 1989; Hamermesh and Biddle, 1994) used the Canadian Quality of Life data to examine the exact same relationship as the one postulated in the present study, neither of them took full advantage of the panel features to both assess reliability and validity of physical attractiveness measurement itself and to fully explore the opportunities to scrutinize the causal nature of this association. Both studies have concluded that looks are important and that attractive respondents earned higher annual/hourly salaries than less attractive respondents.

Both studies have acknowledged the importance of measuring the physical attractiveness variable reliably. Roszell et al. stated, for example, that the procedure utilized in the CQL "is not ideal for measuring attractiveness precisely, because it involves only one indicator and is based on the ratings of

numerous interviewers, many of whom could use quite disparate criteria when assessing the attractiveness of the people they happened to interview" (1989:551). As indicated elsewhere, the panel data involves three independent ratings of each subject by three different interviewers. The only disadvantage is that these ratings were not made at the same time but were separated by two-year intervals. The fact that many different interviewers were used is more likely to constitute a strength -- at least as far as generalizability is concerned -- than a weakness of that particular approach. The studies mentioned made no further attempt to investigate what this variable measured (i.e., validity) and whether whatever 'it' measured was measured reliably. They have simply assumed that the measurement of physical attractiveness was adequate and that the measurement error was distributed randomly.

Hamermesh and Biddle asserted that "the crucial issue for our purposes is whether standards of attractiveness change slowly enough to allow labor-market decisions related to beauty to be planned for a horizon as long as a person's expected working life. The evidence seems quite clear on this issue: within a culture at a point in time there is tremendous agreement on standards of beauty, and these standards change quite slowly" (1994:1175). These statements were then supported by citing the results of one study by Hatfield and Sprecher (1986). Of course, there are two distinct aspects concerning stability of physical attractiveness. While standards of attractiveness *within* a given culture appear to be quite stable, *within-individual* stability over the lifespan is considerably more problematic and not well supported empirically.

Hamermesh and Biddle's own demonstration that "while 'beauty is in the eye of the beholder', beholders view beauty similarly" (Hamermesh and Biddle,

1994:1176) was provided by the crosstabulations of the attractiveness ratings in the Canadian Quality of Life Survey obtained in two adjacent years. Utilizing the chi-square statistic they argued that in each table there was "much more clustering along the prime diagonal than would arise randomly. Thirty-five percent of the sample is rated identically in all three years; and nearly 93 percent of the respondents are rated identically in at least two years and only one rating level different in the third year. There is substantial positive correlation in how people rate others' looks" (1994: 1177). But whether such an approach can justify their conclusions is questionable. First of all, it is important to point out that the chi-square is not an appropriate statistic to assess reliability or strength of a relationship (see Tinsley and Weiss, 1975). It tells us that the relationship between the adjacent ratings is nonrandom (against the null hypothesis of no such association) but then with a sample size of over 1,300 not many associations are.

The fact that only 35% of the sample received identical ratings suggests either measurement problems (i.e., reliability) or actual change in physical appearance over time (i.e., stability). The second part of their statement concerning identical ratings in any two years and the third rating only one level different loses some of its punch when one considers that the two extreme points on the 5-point physical appearance scale are almost never utilized (2.5% and 0.7% of the CQL sample, respectively). Their subsequent calculations were based on the assumption that every judgment had the same probability. This assumption is clearly not applicable if raters do not use the end categories of a rating scale with the same frequency. As a consequence, the range of choices is narrowed and the true probability of chance agreement increases. This results

in underestimating the probability of chance agreement and overstating the observed agreement.

"He had but one eye, and the popular prejudice runs
in favour of two."
Charles Dickens, *Nicholas Nickleby*s

SECTION II - LITERATURE REVIEW

'What is beautiful is good'

Because the main objective of this study involves examining the relationship suggested by a fairly substantial body of evidence generated in one area of social research and relating it to another one, two distinct bodies of empirical research and their respective theoretical frameworks will be reviewed. More specifically, we will examine relevant empirical and theoretical literature associated with physical attractiveness and its effects, on the one hand, and the wage differentiation and wage growth processes literature, on the other. Finally, we will propose a theoretical framework that would allow us to incorporate and to test empirically the role played by physical attractiveness in the later processes.

The task of reviewing the relevant empirical literature in the area of physical attractiveness is considerably facilitated as a number of meta-analytic reviews as well as descriptive studies and narrative reviews were recently conducted in this area. In the last 30 years scores of studies have correlated ratings of physical attractiveness with other characteristics, including personality traits, cognitive ability, popularity, social skills, and sexual experience (see reviews by Bull and Rumsey, 1988; Cash, 1981; Hatfield and Sprecher, 1986; Patzer, 1985; Jackson, 1992). In addition, several formal meta-analytic studies were carried out to assess global and dimension-specific effects of attractiveness (Eagly et al., 1991; Jackson et al., 1995; Feingold, 1992; Dusek and Joseph, 1983; Ritts et al., 1992; Mazzella and Feingold, 1994).

Although most introductory social psychology textbooks have treated the beauty-is-good stereotype as a homogeneous, potent, and firmly established phenomenon, the evidence generated by the more recent meta-analyses suggests that the effects of physical attractiveness might be smaller and not as general as previously thought. It would be difficult -- if not impossible -- to review within the scope of this study all the research in which attractiveness appears, as their number is, indeed, staggering. We feel, however, that studies cited below as well as those referred to earlier on, are representative of the literature as a whole and/or illustrate several points that are relevant while addressing the possible role of physical attractiveness in the labour market.

A study by Langlois et al. (1995) examined the relations between infant attractiveness and maternal behaviour (i.e., feeding and playing) with their firstborn infants immediately *post partum* and at 3 months of age. Mothers of more attractive infants were found to be more affectionate and playful compared with mothers of less attractive infants. The attitudes of the mothers of more attractive infants were also more positive than those of mothers of less attractive infants, but the number of differences in attitudes was not as great as the behavioural differences (cf., Hildebrandt and Fitzgerald, 1978). Similar studies by Hildebrandt (1982), Ritter, Casey and Langlois (1991) provided additional evidence supporting the notion that infants who are evaluated as more attractive (i.e., cute) receive more smiles, touching and care than those perceived as less cute. Although only anecdotal in nature, it seems that the impact of attractiveness can be deadly. A neonatologist at a major Canadian hospital observed, for example, that survival chances of premature babies seem to be partially determined by their attractiveness. Apparently, more attractive infants

receive more attention from medical staff and parents alike and this increases the likelihood of their survival (Outerbridge, 1995; cf., Lorenz, 1963).

Other research suggests that these preferences are reciprocal. Infants prefer (i.e., look longer at) faces rated by adults as attractive to faces rated as unattractive (Langlois et al., 1987; Samuels and Ewy, 1985). These findings were interpreted by some as supporting the sociobiological view that attractiveness is innate rather than culturally determined (cf. Alley and Hildebrandt, 1988). However, an alternative explanation was put forward and empirically tested by Langlois and Roggman (1990). They suggested that these early preferences for attractive faces are due to the infants' ability to form prototypes of attractiveness by averaging features and subsequently to recognize them. They tested this hypothesis and demonstrated that infants prefer attractive faces because they recognize them as 'average'.

The existing research suggests that attractive children have more and perhaps better friendships than do less attractive children (Langlois and Downs, 1979; Smith, 1985). Dion and Berscheid's (1972, 1974) studies of pre-school children indicated that attractive children were more popular and were perceived by their peers to be more independent and reliable while unattractive children were believed to be more antisocial and aggressive. Some of these relationships were applicable only as far as boys were concerned. Other studies suggested that attractiveness was consistently associated with peer popularity but for girls only (Vaughn and Langlois, 1983; Langlois and Styczynski, 1979) while still others found that this association was equally important for both genders (Adams and Roopnarine, 1987; Zakin, 1983). Alley and Hilderbrandt

(1988) reviewed the research on facial attractiveness and peer relationships in children and concluded that attractiveness is an advantage for both sexes.

Another classic study by Dion (1972) suggested that adults are equally biased in their treatment of less attractive children. Although her research failed to support the hypothesis that the intensity of punishment recommended by adults for a child's transgression would differ depending upon the attractiveness level of the child, she was, nevertheless, able to demonstrate that unattractive children were perceived to be much more likely to commit future transgressions and to be less "honest" than were more attractive children. Her first hypothesis found, however, substantial support in experimental research on mock juror judgments. The physically attractive defendants were found in several studies to be treated more leniently, awarded less severe punishment and larger settlements (Darby and Jeffers, 1988; Piehl, 1977; Efran, 1974; Leventhal and Krate, 1977). Of course, this is not surprising, as the less attractive individuals are expected to be more socially deviant and antisocial (Deitz and Byrnes, 1981; Saladin, Saper and Breen, 1988; Unger et al., 1982). Mazzella and Feingold (1994), who conducted a meta-analysis of research on mock jurors' judgments, concluded that it was advantageous for defendants to be physically attractive, female, and of high SES, although these advantages were near zero for some crimes.

Scores of studies have addressed 'teacher expectancies' concerning academic performance -- both perceived and actual -- for children from preschool through college based on the child's level of attractiveness, teacher's level of experience, race and gender of both students and teachers. A study conducted by Clifford and Walster (1973), for example, asked 400 teachers to

evaluate the same report card that differed along one dimension: a picture of the student attached to the report was either of an attractive or unattractive child. The more attractive girls and boys were predicted to have higher IQ, were expected to attain higher levels of education, and were assumed to have parents who were more interested in their education than were the less attractive students. Two meta-analytic reviews of the research conducted in this area (Dusek and Joseph, 1983; Ritts et al., 1992) indicated that a child's attractiveness affects teachers' judgments on several dimensions including intelligence, academic potential, grades, and social skills. These findings were further supported by yet another meta-analytic review conducted by Jackson et al. (1995) who concluded that differential expectations and/or treatments are not unreasonable given that attractiveness is related to actual intellectual competence in children.

Again, there is also evidence suggesting that these relationships are likely to be reciprocal. Namely, not only are more attractive students assumed to be smarter and receive better grades but, similarly, more attractive teachers are perceived by the students to be more professionally competent (Chaikin et al., 1978; Buck and Tiene, 1989; Hunsberger and Cavanagh, 1988). Hunsberger and Cavanagh (1988) reported, for example, that primary school children had strong expectations of new teachers based on their physical attractiveness. Children expected attractive teachers to be nicer, to be more effective and to punish less.

Studies involving physical attractiveness and children are important for a number of reasons. First, because differential expectations or treatments at an early developmental stage are particularly likely to lead to permanent

differences in terms of social skills and social competence. Second, because the assessments of physical attractiveness involving children are much less likely to be 'contaminated' by sexual connotations that are almost inevitably present whenever adults are rated and studied. Finally, because the unstated social norm that differential treatment based on physical attractiveness constitutes a basic form of injustice should be particularly strong when applied to children. That is, because attractiveness is to some extent an achieved characteristic, children should be viewed as far less 'responsible' for how they look than adults and thus differential treatment should be less socially acceptable.

These differential expectations and, to a lesser degree, treatments based on physical appearance continue to persist into adulthood. There is evidence that physical attractiveness is associated -- and more often than not and in the expected direction -- with a variety of outcomes such as psychological and social adjustment, helping behaviour, self-esteem, marital satisfaction, occupational prestige, mental health, romantic popularity, number of same-sex friends, sexual experience, dominance, grade point average, sexual permissiveness, intelligence, perceived competence for both male and female politicians and the list goes on and on (see reviews by Burns and Farina, 1989, Bull and Rumsey, 1988; Cash, 1981; Hatfield and Sprecher, 1986; Patzer, 1985; Jackson, 1992). The importance and persistence of these associations was summarized in the following way by one of the leading investigators in the field of attractiveness,

"A person's physical attractiveness level has been revealed by numerous investigations to be an extraordinarily important psychological variable, for it has accounted for a statistically significant proportion of the variance in almost all situations in which it has been investigated and for almost all dependent

measures which have been constructed to show its effects" (Berscheid, 1986:322).

The evidence generated by several recent meta-analyses generally seems to support many of these findings but it also suggests that the effects of attractiveness might be considerably smaller and/or restricted to several specific dimensions or contexts. The meta-analytic study by Eagly et al. (1991) examined the effect of attractiveness on six different dimensions: social competence, adjustment, intellectual competence, potency, integrity and concern for others. They concluded that the effects of attractiveness were largest for the dimension of social competence, intermediate for the dimensions of adjustment, intellectual competence and potency, and near zero for the dimensions of integrity and concern for others. Consistent with the authors' implicit personality theory framework, a substantial portion of this variation was explained by the specific content of the inferences that subjects were asked to make. They also noted that the strength of the "beauty-is-good" stereotype decreased as more information about other aspects of individual targets became available to the subject. Thus the effects of attractiveness were expected to be weaker in environments where perceivers had more extensive information about targets, such as among family, friends and co-workers, than in situations of first encounters with strangers (Eagly et al., 1991). There were no significant gender differences on any of the dimensions studied.

Feingold's (1992) meta-analysis reported large effects of attractiveness for the dimension of sexual warmth and social skills; medium effects for sociability, dominance, and mental health; small effects for modesty (inversely related to attractiveness) and intelligence; and no effects for character. He also reported some gender differences but only for the dimension of sexual warmth

(stronger for females). Another meta-analytic study examined the relationship between attractiveness and intellectual competence. The results suggested that attractive individuals were perceived as more intellectually competent than less attractive people and that this effect was stronger for males than for females. Furthermore, attractiveness was related to actual intellectual competence in children, but not in adults (Jackson, Hunter, and Hodge, 1995).

Thus, people who are attractive are believed, rightly or wrongly, to be somewhat superior in all sorts of ways. The existing research also indicates that in some ways, they actually are. Goldman and Lewis (1977), for example, provided some indirect evidence that possible wage differences might be due to the actual differences in terms of competence and/or productivity that might characterize individuals who differ in terms of attractiveness. They asked male and female students who did not know each other to conduct a short telephone conversation. Subsequently, the subjects were asked to rate each other in terms of likability and social ease. Those individuals who were rated as the most socially skillful and likable turned out to be the most physically attractive. What is important to note here is that attractiveness ratings of the subjects were made independently and prior to the telephone conversation. It seems that years of favourable stereotyping, combined perhaps with the greater opportunity to socialize, resulted in a self-fulfilling prophecy (cf. Snyder et al. 1977). A study by Reis et al. reached similar conclusions, "as a result of a person's physical attractiveness, differential levels of social competence are acquired ... these in turn affect social participation" (1982:992). Alternatively, it was also suggested that one of the reasons why attractive people are perceived as having so many positive characteristics is because other people are more likely to draw positive behaviour out of them.

It is not unreasonable to anticipate that these advantages or disadvantages associated with one's appearance might also manifest themselves within the labour market context. This is particularly likely to happen if, as suggested by several studies, physical attractiveness is linked to the evaluations of competence, ability, performance, and final task outcomes. All these evaluations are associated, at least in theory, with productivity (actual or perceived) and hence to economic success.

There is evidence that work of identical quality is rated more highly if it was performed by someone believed to be physically attractive (Cash and Trimer, 1984; Hunsberger and Cavanagh, 1988; Lewis and Bierly, 1990; Berscheid and Walster, 1972; Landy and Sigall, 1974). The research in this area typically involved evaluations pertaining to writing quality or artistic abilities. Most of these studies were designed in such a manner that the author's physical attractiveness as well as essays of various qualities could be easily manipulated. The findings of these studies indicated that,

"The essays with the 'authors' of higher physical attractiveness were evaluated as having better ideas, possessing better style, being more creative, and generally being of higher quality than those essays with authors of lower physical attractiveness. The physically attractive authors were attributed higher intelligence, greater sensitivity, greater talent, and overall greater ability than their counterparts of lower physical attractiveness" (Patzer, 1985:102).

Introduction of several additional variables such as sex of the author (Kaplan, 1978; Bull and Stevens, 1979), race (Maruyama and Miller, 1980) or personality of the authors and sex of the judges (Murphy and Hellkamp, 1976) resulted in findings that were generally consistent with the physical attractiveness stereotype.

Several studies have shown that attractive people are more likely to receive credit for good outcomes, whereas the good outcomes produced by unattractive individuals are more likely to be attributed to external factors, such as luck (Seligman et al., 1974). There is some evidence that attractiveness influences the ratings of social skill. Hope and Mindell (1994) found, for example, that attractiveness had no influence on ratings of incompetent behaviour. However, their results indicated that the same skilled behaviour was viewed as more competent when performed by an attractive person compared with an unattractive person. They concluded that physical attractiveness does not compensate for poor interpersonal skills but that a skilled attractive individual may be judged to have particularly good skills.

Attractiveness was shown to be related to several personality characteristics likely to be valued in the labour market context such as self confidence and interpersonal orientation (Brezezicki and Major, 1983; Swap and Rubin, 1983), achievement striving and independence (Krebs and Adinolfi, 1975), resistance to peer pressure (Adams, 1977), internal locus of control (Markley, Kramer, Parry and Ryabik, 1982), assertiveness (Adams, 1977), lower anxiety, depression and fear of failure (Cash and Begley, 1976), perceived interpersonal power (Longo and Ashmore, 1992) and less fear of evaluation (Adams, 1977). Attractive people were also shown to be more persuasive than were less attractive individuals (Reingen and Kernan, 1993; DeBono, 1992; Pallak, 1983) and this was equally true for female and male targets and female and male communicators (Chaiken, 1979).

Beauty and the labour market

There are several studies that addressed the role of attractiveness in the work context. While many studies conducted in this area were criticized for their lack of external and ecological validity (see Morrow and McElroy, 1984), they provide a number of interesting insights concerning the role of beauty in the labour market. Research generally supports the conclusion that attractive applicants tend to be evaluated more favourably than less attractive applicants with identical credentials (Snyder, Berscheid and Matwychuk, 1988; Gilmore, Beehr and Love, 1986; Dipboye, Arvey and Terpstra, 1977). Dipboye et al. (1977) conducted a study in which college students and personnel officers were asked to evaluate job applications with attached photographs and they found that attractive candidates were preferred over unattractive ones.

A study by Waters (1980) found that when female job seekers were offered jobs, the starting salaries of the attractive applicants were from 8% to 20% larger than salaries offered to unattractive applicants for the same position. In fact, her study used the photos of the same females that were made to appear either attractive or unattractive and that were then attached to resumes and sent to employment agencies or personnel officers in large corporations. By doing so, this study not only provided a measure of external validity but also demonstrated that attractiveness, unlike race or gender, is partially achieved and can be successfully manipulated. Her subsequent study tested the hypothesis that attractiveness effects for female applicants are limited to low-skill occupations only. Contrary to this prediction she found that "the variable of physical appearance did play an important role in hiring process on all skill levels. Furthermore, as expected, the greatest differences were on the lowest skill level" (Waters, 1985:121).

A study by Ross and Ferris conducted in a natural employment setting (male accountants) analyzed the relationship between physical attractiveness as measured by a combination of facial attractiveness, height and weight, and its impact on performance ratings and salaries. Their research led them to conclude that "physical attractiveness was found to be related to many ratings of performance" (1981:628) but there was no effect on salaries. Dickey-Bryant et al. (1986) examined the relationship between the attractiveness of military cadets and the rank obtained 12 years later and found no relationship. However, they reported several beneficial effects of attractiveness for males in the military when combined with other characteristics such as intelligence (cf. Mazur, Mazur and Keating, 1984).

Several studies attempted to investigate whether physical attractiveness has a uniform effect in the work place for both sexes and whether characteristics of the occupation to which the applicant was applying (i.e., gender-linked) were relevant. The results of these studies were inconclusive and, at times, contradictory. Some studies found, for example, that physical attractiveness is always an advantageous attribute for both sexes in gender-neutral occupations and in same-gender occupations and has no effect in other-gender occupations (Cash et al., 1977). Heilman and Saruwatari (1979) reported, on the other hand, that physical attractiveness was always advantageous for men but not for women. For women, the positions that were viewed as sex-appropriate rewarded physical attractiveness whereas attractiveness had an adverse effect for women applying for managerial positions. It is worth noting, however, that theirs was one of the few studies to report adverse effects of attractiveness for females (cf. Hickson, 1993). They explained their findings in terms of the 'perceived fit' between characteristics of the applicant and occupation. That is,

that attractiveness for females was associated with femininity and as such attractive women were perceived as less suited for occupations that value 'masculine' characteristics (cf. Moss and Frieze, 1987).

At the same time, there are several studies that suggest that attractiveness sometimes benefits females in male-dominated occupations (Lewis and Bierly, 1990; Waters, 1985). A recent study of a sample of 452 male and 285 female MBA graduates over a 10-year period suggested that attractiveness in managerial positions was as important for men as it was for women (Frieze, Olson and Russell, 1991). They found that the more attractive men had higher starting salaries and continued to earn more over time. Although there was no effect of attractiveness on starting salaries for women, they tended to earn more later on in their jobs than the less attractive women. Men earned \$2,600 more on the average for each unit of attractiveness (on a 5-point scale), and women earned \$2,150 more. A study by Morrow et al. (1990) addressed the extent to which a job candidate's physical attractiveness, sex, and age, along with the rater's age and sex, affect recommendations for promotions. Results indicated a small, favourable bias in favour of attractive candidates, consistent with prior research.

A study by Good et al. (1986) used a large sample of MBAs to evaluate whether characteristics such as height and weight affect the starting and later salaries of managers. They concluded that taller and non-overweight men earned more than any other group in their sample. This was an important study as it demonstrated the effects of physical attractiveness in a sub-population that was likely to be relatively homogenous both in terms of achieved and ascriptive characteristics. Kaslow and Schwartz (1978) conducted a content analysis of

the responses of women employed in high status occupations regarding the role of attractiveness in their jobs. Their analyses suggested that attractiveness was viewed by these women as an asset in terms of securing the job initially, exposure to new job opportunities, and being promoted to positions of high visibility. It was viewed as a liability in terms of getting along with male colleagues and their spouses and in terms of being taken seriously on the job.

There were also several survey-based studies that examined the relationship between physical attractiveness and occupational success. Quinn (1978), using a national sample (Quality of American Life, 1971) of full-time employees (over 450 females and 800 males), correlated ratings of attractiveness with income and occupational status and reported that the relationships were positive and symmetrical for both males and females. Umberson and Hughes (1987) analyzed a large population-based sample ($n=3692$) and they reported that physical attractiveness was associated with four measures of achievement and eight measures of psychological well-being. They concluded that survey type data corroborates experimental data regarding physical attractiveness stereotypes. Both studies were based on cross-sectional data and ratings of attractiveness were made by the interviewers towards the end of a long, in-depth interview.

Averett and Korenman (1993) investigated income, marital status, and hourly pay differentials by Body Mass Index ($BMI = kg/m^2$) in a sample of 23 to 31 year olds drawn from the 1988 National Longitudinal Survey of Youth (NLSY) in the US. They found that obese women (but not men) had lower family incomes than women whose BMI was in the "recommended" range. Their study also utilized an ingenious approach to adjust for possible confounders. Namely,

in order to control for family background differences, same-sex siblings were also compared and similar patterns were found. They concluded that there was some evidence of labour market discrimination against obese women. However, differences in marriage probabilities and in spouse's earnings accounted for 50 to 95 percent of their lower economic status.

As indicated elsewhere, there were two other studies that used the CQL data set to examine the relationship between physical attractiveness and economic success (Roszell, Kennedy, Grabb, 1989; Hamermesh and Biddle, 1994). Both studies have made limited use of the panel features of this data to examine the causal aspects of this relationship. Roszell et al. utilized two waves of the CQL "to estimate the association between physical attractiveness measured at one point in time [1979] and income attainment at a subsequent point in time [1981], while simultaneously controlling for income at Time 1 [1979]" (1989: 548-9). Hamermesh and Biddle restricted their analysis to regressing 1981 log hourly earnings on 1981 ratings of attractiveness or the average of three years and "as many other causes of variation in earnings as possible" (1994:1180) to isolate the effect of beauty. Both studies conducted analyses separately for males and females.

Roszell et al. (1989) concluded that attractive workers earned higher annual salaries than less attractive workers. This relationship held for men, older workers, and those engaged in occupations primarily filled by men. Women, younger workers, and those working in jobs largely performed by women tended not to gain any significant economic return from greater physical attractiveness. Hamermesh and Biddle (1994) used the 1977 Quality of Employment, the 1971 Quality of American Life, and the 1981 Canadian Quality

of Life surveys, all of which contain interviewers' ratings of the respondents' physical appearance to develop and test a theory of sorting across occupations based on looks. After adjusting for demographic and labour-market characteristics, they concluded that plain people earned less than people of average looks, who earned less than the good-looking. The penalty for plainness was 5 to 10 percent, slightly larger than the premium for beauty. These effects were slightly larger for men than for women. There was also some evidence that better-looking people sort into occupations where beauty was likely to be more productive but the impact of individuals' looks on their earnings was mostly independent of occupation.

"We tend to impute a wide range of imperfections on the basis of the original one."
 E. Goffman, *Stigma: Notes on the Management of Spoiled Identity*

SECTION III - THEORETICAL FRAMEWORKS

Physical attractiveness and social psychology

Despite the impressive number of studies that were conducted in the area of physical attractiveness, theoretical frameworks that would allow us both to explain and to predict how physical attractiveness is likely to operate within the labour market context are surprisingly under-developed. Several recent meta-analytic studies in the area of physical attractiveness were conducted along the theoretical frameworks defined by expectancy theory, implicit personality theory and, to a lesser extent, by status generalization theory. How and why physical attractiveness is thought to influence the process of person perception is what differentiates between these theoretical frameworks. Person perception refers to those processes by which we come to know and think about others and, ultimately, about ourselves. We construct images of others in ways that help us to stabilize, make predictable and manageable our view of the social world. The attribution of stable traits and enduring dispositions to other people helps us to better understand their behaviour and anticipate how they are likely to behave or react in future encounters.

Generally speaking, there are two sides to the attractiveness phenomenon: how we see ourselves and how we are seen by others. Because these two facets of attractiveness appear to be largely orthogonal -- as indicated by small correlation coefficients between the self-assessed and other-assessed attractiveness -- different theoretical frameworks are required to account for how

these perceptions develop and how they affect us and our interactions with others. The self is the individual as known to the individual in a socially determined frame of reference (Murphy, 1947; Newcomb, 1950). It is an abstraction that we develop about our attributes, capacities, and activities (Coopersmith, 1967). That is, how we think about ourselves. Each person acquires a self-image by imagining how he or she looks to other people. As summarized by Collins, our self-image derives from our experience with other people,

"Do you think of yourself as good-looking, plain, or downright hideous? Do you feel confident, controlled, spontaneous, anxious, or harried? Successful or unsuccessful? These feelings about yourself are for the most part formed by the way in which other people have treated you. This dependence of the self-image upon other people is well known in social psychology. We tend to see ourselves through the eyes of other people. To express this fact the sociologist Charles Horton Cooley coined the term 'the looking-glass self'" (1992:36)

The theories related to the self-image and the role played by attractiveness in its establishment and maintenance are only of secondary relevance for our purposes. This is not to say that they are not important but because our study aims to examine the relationship between attractiveness and economic success in which ratings of attractiveness were based on judgments by others, we will concentrate on these theoretical frameworks which emphasize the second side of the attractiveness coin. That is, how we are seen by others.

Ashmore and Del Boca (1979; Ashmore, Del Boca, and Wohlers, 1986) suggested that the roles that stereotypes play in person perception can be understood according to implicit personality theory. According to this theory, stereotypes -- including those associated with physical attractiveness -- are a fundamental part of social cognition that influence person perception.

Differences in people's physical appearance may provide a basis for categorization of other traits representing an exaggerated belief associated with a particular category (Dion, 1986). Implicit personality theories "are hypothetical cognitive structures whose primary components are personal attributes (e.g., personality traits) and inferential relations that specify the degree to which these attributes covary" (Eagly et al., 1991:110). The social categories 'physically attractive' and 'physically unattractive', which are themselves implicit personality theories, are linked inferentially to a variety of evaluative dimensions (Kim and Rosenberg, 1980; Rosenberg, 1977; Rosenberg and Sedlak, 1972).

Expectancy theory suggests why attractive individuals are not only likely to be perceived as different but should be actually different from less attractive individuals. This theory claims that people hold positive or negative expectations based on the target's level of attractiveness that influences their behaviour toward the target. This, in turn, influences the target's behaviour toward confirming these expectations. Ultimately, these positive or negative expectations are incorporated into his or her self-concept via the self-fulfilling prophecy (Harris and Rosenthal, 1985; Jones, 1986; Miller and Turnbull, 1986). These three stages are considered to occur in a reciprocal manner across the life span. However, the precise mechanism whereby others' expectancies and behaviour influence a target's self-concept is still to be specified (Feingold, 1992).

Status generalization theory evolved from expectation states theory and status characteristics theory to explain how external status characteristics -- such as gender or ethnicity -- are thought to influence interaction patterns and outcomes in informal, task-oriented groups (Berger et al. 1985). The theory can

be summarized in the following way, "external status characteristics are used to generate expectations states regarding performance (the "spread of relevance" of status characteristics) even without prior association between these characteristics and performance (the "burden of proof assumption"), and often without conscious awareness" (Jackson, Hunter and Hodge, 1995:109). 'Diffuse status characteristics' -- unlike 'specific status characteristics' -- carry connotations of traits and abilities without any explicit limit. 'Specific status characteristics' are explicitly linked to particular abilities of limited scope such as those describing different occupations (e.g., 'doctor', 'plumber', 'actor' or 'janitor'). These characteristics are prestigious or invidious and they carry connotations of some specific skill or of its absence. As a result, we expect a doctor to be good at healing but not necessarily at washing windows or fitting pipes.

'Diffuse status characteristics', on the other hand, are not only broader in scope (e.g., race, sex or age) and associated with different levels of prestige but also carry, along with other characteristics, connotations for being good at 'most tasks'. Sex is a diffuse status characteristic in our culture "because men are widely believed to be better than women at tasks requiring strength, mechanical skill, logic, athletic abilities, distance judgment, etc. That etc. is important because diffuse status characteristics carry connotations of characteristics and abilities without any explicit limit" (Webster and Driskell, 1983:146). Webster and Driskell were first to suggest that attractiveness shares many similarities with other cases of status generalization such as those produced by race, age or gender and that attractiveness and its effects can be better understood in terms of this framework.

Webster and Driskell argued that attractiveness affects cognition and interaction patterns and as such it meets all the criteria of a diffuse status characteristic in our culture. First, there are at least two states of attractiveness (i.e., attractive and unattractive individuals) which are evaluated differentially and it is preferable to be attractive than to be unattractive. Second, there are specific expectations that cause attractive individuals to be perceived as being better at performing specific tasks for a wide range of different tasks. Third, there is a very general expectation state expressed, for example, by the 'what is beautiful is good' thesis such that attractive people are seen as more skilled at most tasks without regard to whether attractiveness is relevant or not to the performance of a given task.

Webster and Driskell suggested that attractiveness -- due to its immediate accessibility -- becomes salient (i.e., noticed) in most social situations and treated as a significant and an integral part of these interactions. Once salient, it is treated as *if* it gave useful clues about the individual or his/her ability to perform different tasks. Furthermore, "the burden of proof is on demonstrating that the status characteristic is NOT relevant to ability, instead of the other way around" (1983:146). These mechanisms of how attractiveness operates have been empirically demonstrated in several studies. First, research suggests that attractiveness judgments are reliably made after only a fraction of a second exposure to a target (Goldstein and Papageorge, 1980). Furthermore, attractiveness has been shown to influence perceptions of others even without calling conscious attention to it (Kassin and Baron, 1986). Finally, attractiveness automatically elicits positive effects in others (Burns and Farina, 1989; Larsen, Diener and Cropanzano, 1987).

This theory also describes how status characteristics combine to influence generalized expectation state, specific expectation states, and, ultimately, interaction patterns. According to Webster and Driskell, "all status information is used in status generalization -- none is ignored or eliminated through cognitive processing" (1983:147). Moreover, "expectations produced through status generalization reflect an aggregate view of all status characteristics possessed by each person" (1983:147). The aggregating principle suggests that different information about an individual is combined to arrive at aggregated or overall expectations. Whenever information about other status characteristics such as age, sex, occupation, or various abilities besides attractiveness are known they will combine to form the aggregate expectations associated with each individual (i.e., $e = e^+ + e^-$; where 'e' represents aggregated expectations of an individual, 'e+' represents combined positive expectations, and 'e-' combined negative expectations).

Status generalization theory also describes how attractiveness influences the development of an individual's competence as well as perceptions of his/her competence by others. According to Berger et al. (1985), because people hold higher generalized expectations about attractive individuals, they receive and act on more opportunities to contribute to task outcomes; receive more positive evaluations; have more influence on group decisions; and are less likely to accept attempts to be influenced by others. Two other important issues related to status generalization theory were addressed by Zelditch (1985). Namely, the combined effects of diffuse and specific status characteristics; and how the nature of the competence measure (i.e., direct versus indirect) may influence the strengths of attractiveness effects. According to Zelditch (1985), diffuse status characteristics are connected to task outcomes

by longer 'paths' than are specific status characteristics. He found that "a specific, instrumental status characteristic had stronger effects than a diffuse, non relevant status characteristic on expectation states and behavior" (Jackson et al., 1995:109). Furthermore, "diffuse status characteristics have stronger effects on expectations states when specific, task-relevant status characteristics are absent" (Jackson et al., 1995:110).

Human capital theory

Human capital theory traces its roots back to Adam Smith who observed that "a man educated at the expense of much labour or time ... must be expected to earn over and above the usual wages ... the whole expenses of his education, with at least the ordinary profits of an equally valuable capital". The human capital approach which was subsequently developed and articulated by Schultz (1961), Becker (1964, 1967) and Mincer (1957, 1958, 1962) derives from the neoclassical economic theory of wages and it claims that wages will be equal to the marginal revenue product of labour. In non-economic terms this means that people will be paid wages which represent the value of their economic contribution to their company. The substantial wage differentials found in modern industrial societies depend, therefore, on the differential marginal productivity that characterizes individual workers. Marginal productivity is in turn predicted by the degree of training, in terms of formal education, on-the-job training and other productivity-enhancing characteristics that each worker brings to the labour market.

Human capital theory states that pay differences are derived from the stock of skills a person possesses and which influence his/her productivity and hence his/her value to the employer. In doing so the theory makes a number of

assumptions about labour markets, about characteristics of individual workers, about homogeneity of jobs, about determinants of productivity, and about the wages themselves. Firstly, labour markets are assumed to be competitive. Secondly, it is assumed that formal education and on-the-job training are productivity enhancing devices. Thirdly, that 'compensating differentials' or similar devices can account for a large part of the existing pay differences. Finally, that any departures from this model -- at least in the long-run -- would be corrected by market forces.

But some critics have argued that the assumption of perfect competition within the labour market is one of analytical convenience, but that it is not consistent with the market imperfections which appear to characterize most advanced economies. For example, Hyman noted that

"The setting of wages and salaries necessarily involves relations of control. The superficial equality of buyer and seller in any market transaction conceals inequalities of economic power which often permit certain parties in large measure to dominate the terms of exchange; markets are media of control just as much as they are media of exchange. This is particularly true of the labour market, where the concentrated power of capital confronts the far more vulnerable sellers of labour power, and where the most orthodox economic theorists are obliged to recognize a multiplicity of 'imperfections' which represent the impact of institutional and ideological pressures on the interaction of supply and demand" (1980:308).

Human capital theory assumes open and equal competition for jobs, where people with highly valued skills and abilities freely choose jobs with higher pay and status. Furthermore, neither workers or firms exert control over the market wage and information is perfect and costless. In other words, it is the job-related characteristics of individuals that determine who gets the best jobs and not some extrinsic -- individual or aggregate -- characteristics such as gender, race, attractiveness, collective bargaining, type of industry or region of the country. It

was pointed out, however, that the stubborn persistence of these 'imperfections' suggests that they are likely to be permanent rather than transitory in nature. Some of the aspects of labour markets that make them 'deviate' from perfect competition identified by human capital critics are the existence of labour unions, custom or tradition, institutional inertia, feedback effects, and government intervention.

The marginal productivity theory of wages assumes that human capital variables such as years of formal education or experience -- which are only proxies of unknown quality for productive differences of the individual workers -- are in fact productivity enhancing. Some critics have questioned how far any association between extent of education -- or other productivity enhancing skills or characteristics -- and wages is due to productivity that education or other characteristics actually build into the worker. They have argued that it may well be that a given level and type of education serves as a signal of innate ability and that innate ability is more valuable in certain jobs than in others (Thurow and Lucas, 1972). Formal education (degrees, diplomas, certificates) might be accepted, therefore, as credentials signaling the qualities that the employer is really looking for, such as motivation or responsibility. Schools and colleges might be responsible not so much for enhancing human capital but rather they might serve as agencies that carry out a selection procedure in which academic achievement is equated with capacity to learn. As noted by Gintis (1971), the apparent contribution of schooling to higher incomes seems to be largely explained by the personality characteristics of those who have higher formal education. Consequently, "the labour market is not primarily a market for matching the demands and supplies of different job skills, but a market for matching trainable individuals with training ladders" (Thurow and Lucas,

1972:21). A more radical version of such an approach suggests that educational requirements for employment and advancement reflect the interests of groups that have the power to impose them more than they reflect the technical needs of a particular position (Collins, 1975).

Some critics have argued that the relationship between marginal productivity and wages is also problematic. They noted that the direct measurement of productivity may, in many cases, prove to be extremely difficult, if not impossible. Furthermore, it is argued that these difficulties are likely to intensify as we enter the post-industrial era where more and more jobs involve manipulation of ideas or provision of non-tangible services. Because direct assessment of productivity is likely to be even more difficult in these types of jobs, perceived productivity is likely to be as important in wage determination as actual productivity.

There are several studies that attempted to measure productivity directly (see Mazkiel and Mazkiel, 1973), but because of the difficulties involved, most of the empirical research has concentrated instead on workers' characteristics that are assumed to be productivity enhancing. Others have argued that it is not at all certain that even if productivity could be measured directly and accurately there would be the expected relationship with wages as predicted by human capital theory. This is not to say that productivity has no bearing on wages at all but rather to suggest that considerable 'departures' from this model may well exist. While no individual firm or business can afford to pay wages that are higher than their profits, it is not only feasible but also to be expected that some workers employed within a given firm or company will be paid below or above

their levels of productivity or 'their economic contribution to their company' (cf. Frank, 1985).

Because level of formal schooling alone accounts for relatively little in terms of earning differentials, an equally important role is being played by the 'experience' or on-the-job training as a human capital variable. Some critics have argued, however, that on-the-job training and its role in the earning differentials creates similar ambiguities to those that characterize formal education. As noted by Treiman and Hartman, work experience and its amount may "reflect either productivity-enhancing, on-the-job learning or simply seniority: in observing a correlation between wages and experience, one does not know to what extent it is higher productivity or greater seniority that is associated with higher pay" (1981:18).

Two other models designed to account for wage differentials, both derived from neoclassical economic theory, are based on employer and/or consumer preferences and 'crowding'. Becker (1957,1971) suggested that 'tastes' of employers, employees, or customers are the motivating factors responsible for discriminatory behaviour within the labour markets. These types of discrimination are likely to be applicable only in those types of jobs where 'preferences' on the part of workers, customers or employers might be perceived as relevant and can be acted upon. Some economists would argue (see Oettinger, 1996), however, that the very existence of 'tastes for discrimination' gives incentives for segregation. Segregation, in turn, tends to prevent discriminatory tastes from manifesting as a wage gap. Finally, as noted by Oettinger, "There is a long-standing reluctance within economics to explain observed economic outcomes by differences in tastes. Second, as was noted by

Arrow (1973), the tastes model has difficulty generating the wage gap that it seeks to explain -- at least as a long-run equilibrium in a competitive and fully informed labor market" (1996:53).

Bergman (1971,1974) proposed a model of labour market discrimination based on the concept of 'crowding'. According to this framework the distaste for hiring some minority groups is so strong that employers exclude them from many job opportunities. This, in turn, increases the supply of labour available for jobs open to these minorities relative to other jobs and thus reduces the market wage paid for these jobs. Similarly, the wages of favoured groups are higher than they would be otherwise because of their relative undersupply. But, as pointed by some, the hiring or wage discrimination in 'attractive' jobs to which the crowding thesis traces the low wages in 'unattractive' jobs is itself an anomaly within human capital theory (see Kilbourne et al. (1994) on gender discrimination). The literature on occupational crowding has implicitly assumed that this type of discrimination is occupation-specific but that segregation will be incomplete. Most economists would argue that this type of discrimination should be eventually eradicated by competitive market processes (Arrow, 1972; England, 1992: chapter 2). That is, by not hiring less attractive individuals employers are paying a premium for attractive workers, making their profits lower and increasing the probability that they will go out of business or lose product market share.

More recent work conducted according to the neoclassical theory of wages attempted to determine whether imperfect information in the labour market can generate between-group differences in average wages for groups that are, on average, equally productive. The standard version of this model

(Aigner and Cain, 1977) assumes that there are at least two groups with identical distributions of productivity. However, the actual productivity of any given worker from either of these groups is initially unknown to the employers. The productivity signal is said to be less informative for workers from some groups than from others (i.e., less correlated with actual productivity). In our case, a signal of less attractive workers might be assumed to be less informative than a signal of more attractive workers. It is then assumed that the individual signal carries less weight than the average group productivity signal in the wage determination process. Consequently, the starting salaries of the less attractive workers should be lower.

Most economists would argue, however, that if attractive and less attractive workers are in fact equally productive then the initial wage differences would tend to disappear over time. This is because "the employer's uncertainty about productivity of workers may be inexpensively reduced by observing the worker's on-the-job performance" (Cain, 1986:728). This claim is based on the assumption that productivity can be accurately observed and thus wages can be adjusted accordingly. However, as indicated elsewhere, direct observation of productivity might be difficult in many jobs or it might be biased by the attractiveness level of the worker (see research on how attractiveness affects evaluations).

Furthermore, even accepting that uncertainty about productivity is transitory in nature, efficient job mobility would be hindered for the less attractive workers. This is because the same mechanism (i.e., productivity signal less correlated with actual productivity) will be invoked every time the less attractive workers change or attempt to change their jobs. A number of

studies have documented that interfirm mobility accounts for around one-third of wage growth over the first 10 years of experience (Topel and Ward, 1992; Bartel and Borjas, 1981; Mincer and Jovanovic, 1981). Booth (1997) reported, for example, that British men and women hold an average of five jobs over their lifetimes, and one-half of all lifetime job changes occur in the first ten years of labour force participation. These findings imply that optimal mobility - the maximization of expected lifetime earnings -- might be responsible not only for the initial wage gap but also for a differential wage growth based on the worker's attractiveness.

Sociological views

Human capital theory and its variations provide some empirical evidence that the occupations with higher earnings generally tend to be those which require more training or productivity enhancing skills. The actual amount of variation in the earnings differentials accounted for by productivity enhancing skills or characteristics is modest but fairly robust to a variety of specifications and settings. This is partially due to the fact that differences in individual abilities and background are left out and because the labour market does not operate in a smooth, perfectly competitive way and partially because workers' productivity and its hypothesized relationship to wages might be considerably more complex. In other words, wage differentials do exist and persist over long periods of time because workers are heterogeneous, jobs are heterogeneous and labour markets are imperfect.

These inadequacies are further illustrated by empirical findings demonstrating, for example, that despite a decline in the gap between men's and women's occupational skill levels (Boyd, 1990) and occupational sex

segregation (see Ornstein, 1983; Armstrong and Armstrong, 1990; Fox and Fox, 1987), the income spread between men and women remains substantial. A more recent study examining the gender gap in career success of women and men in the British labour force concluded that although personality characteristics, job-relevant human capital attributes, demographic characteristics, career choices, labour market economic forces, and structural features of the organizations explained a large amount of the variance in career success, over 55% of the gender gap in career success remained unaccounted for and was attributed to sex discrimination (Melamed, 1995).

The more 'sociologically' based approaches to labour markets are interesting mainly because they point to some alternative mechanisms of wage determination and not necessarily because their predictive power is that much greater. Sociologists argue that factors other than productivity such as presence and strength of unions, economic conditions in a particular industry or enterprise, or other factors extrinsic to the actual levels of productivity are partially responsible for wage differences (Bibb and Form, 1977; Piore, 1979). These sociologically based approaches are particularly suitable if we assume that attractiveness is a socially valued characteristic that might generate wage or wage growth differences without any tangible contribution to productivity.

According to Treiman and Hartman there are two main types of wage discrimination: the first type "occurs when one class of people is paid less than another class for doing exactly or substantially the same job" (1981:9), the second type of wage discrimination "arises when the job structure within a firm is substantially segregated by sex, race, or ethnicity, and workers of one category are paid less than workers of another category when the two groups

are performing work that is not the same but that is, in some sense, of comparable worth to their employer" (1981:9). The first type of wage discrimination is relatively easy to detect and redress providing, of course, that a particular group can be easily identified and thus protected by law. According to Wirth, a minority can be defined as "a group of people who, because of their physical or cultural characteristics, are singled out from the others in the society in which they live for differential and unequal treatment and who therefore regard themselves as objects of collective discrimination" (1945:347). It is apparent, however, that individuals who differ in terms of physical attractiveness do not fit this definition well (lacking cohesive collectivity) and that clear-cut distinctions between who is 'unattractive' and who is not are practically impossible. Because of these 'definitional' difficulties it is feasible that both types of wage discrimination might apply to workers who differ in terms of attractiveness.

The accepted statistical procedure for determining whether discrimination explains earning differences between groups studied is to relate wage differences to personal characteristics that are thought to be legitimate influences on productivity such as job tenure, education or amount of skills using the human capital model. If the average wage of individuals from one group with given job related attributes is not significantly different from the average wage of individuals from other groups with comparable attributes, discrimination is said not to occur. This model was most frequently applied to explain the female-male wage gap and, to a lesser degree, differences in earnings between different ethnic groups. However, in order to interpret all wage differences between groups studied as discriminatory requires that all relevant factors are measured and that they are measured without error.

Needless to say, these requirements are practically impossible to attain. The unexplained residual difference represents, therefore, the maximum differential that could be attributable to discrimination.

If some relevant variables are excluded from the models (e.g., physical attractiveness, social competence, etc.) then our estimates are biased. This can take two different forms: if the excluded variables are correlated with those already included in the model this biases the coefficients of the included variables. If, on the other hand, the excluded variables are not correlated with those already in the prediction equation then the unexplained variance can be substantial and the predictive power of the model compromised. It appears, however, that many of the excluded sociological variables belong to the former category.

Sociologists (and a few economists) now take as axiomatic the proposition that economic action is embedded in interpersonal networks. They argue that the strictly meritocratic approach to modern labour markets fails to consider "the embeddedness of individual behavior in networks of social and economic relations, and the mixture of economic and noneconomic motives" (Granovetter, 1988: 210). From this perspective, all economic action is infused with social motives and the positions that people occupy in social networks open up some economic opportunities while closing off others (Friedland and Robertson, 1990; Swedberg, 1990). In this context, the inclusion of physical attractiveness as a possible source of wage differentiation is designed to invite some polemic on the larger meaning of neglected individual attributes in the wage determination literature.

It is reasonable to suggest that even within finely defined occupations such as lawyer, waiter, or sales clerk, jobs might be further segregated and thus differentially rewarded depending on the individuals' level of attractiveness. In the institutional view of the labour market, discrimination based on physical appearance might be expected, therefore, to take the form of segregation into different jobs rather than lower pay for identical jobs. Studies have shown, for example, that the percentage female in an occupation has a net negative effect on pay, after controlling for occupations' demands for education, other measures of cognitive skill, physical skill, social skill, and onerous working conditions (England et al., 1982; Steinberg et al., 1986; England et al., 1988; Baron and Newman, 1989; England, 1992). The *within* occupational segregation would imply different requirements concerning the level of attractiveness based, for example, on the amount and importance of the face-to-face interactions associated with a particular position.

One of the few sociological studies that utilized less conventional variables to estimate income attainment suggested that *within* occupational differences based on looks might be a promising starting point for exploring what differentiates occupational labour markets. Jencks et al. noted that,

"Dating experience in eleventh grade is negatively related to family status and appears to reduce both educational attainment and occupational status. Nonetheless, dating experience *increases* hourly earnings at age 28. These findings suggest that the social skills or preferences associated with dating help an individual get a well-paid job *within* most occupations, even though they do not help him acquire the credentials needed to enter a high-status occupation" (1972:157).

Given that dating experience is correlated with one's physical attractiveness (see Kaats and Davies, 1970) this approach might provide us with some

insights concerning where and how physical attractiveness matters, how much and to whom.

The complementary nature of the human capital and the more sociologically based approaches can be illustrated by looking at how the gender wage gap can be approached using both models. The human capital explanation of sex differences in wages is that, owing to specialization in household production, women intend to work in the labour market more intermittently than men, and therefore invest less in terms of human capital, leading to lower wage growth. According to England (1985), the major supply-side factor contributing to segregation of the labour markets is the sex-role socialization of children. The patterns of investment in human capital explain very little of the segregation observed. The segregation of the labour market is further perpetuated on the demand side by discrimination in hiring, placement, and promotion. Not surprisingly, most of the sex gap in earnings appears to come from women's concentration in lower paying jobs, and not from men and women in the same jobs getting different pay. The fact that women have accumulated less human capital (e.g., job experience) than men explains only a portion of the pay gap. A final demand-side factor influencing the sex gap in pay is the sort of wage discrimination at issue in "comparable worth." There is evidence that employers take the gender of people doing jobs into account in setting wages, giving lower wages to women's jobs than is commensurate with the skills and training. An alternative "feedback" (Neumark and McLennan, 1995) hypothesis is that women experience labour market discrimination and respond with career interruptions, less investment in human capital, and lower wage growth.

Another interesting issue involves the extent to which the "matching hypothesis" might be operating within the work environment. It may well be that the standards of 'attractiveness' are occupation specific. That is, an individual who is considered as 'attractive' in one occupation might be considered as 'average' or even 'unattractive' in other occupations. Consequently, individuals who are best 'matched-up' in terms of gender, occupation-specific attractiveness, and the occupation itself would reap the largest benefits. Thus the income differentials by looks might represent varying degrees of (mis)-matching that might exist within the labour market. This possibility is consistent with the comparative advantage hypothesis suggesting that individuals self-select themselves into occupations which best utilize their talents.

There is also some evidence that not only do we attribute a wealth of desirable characteristics to beautiful people but that we also attribute similar traits to those who merely associate with the beautiful (Sigall and Landy, 1973). As noted by Schlenker, "people can control the impressions others form of them simply by associating with people who are attractive and avoiding those who are unattractive" (1980:274). This argument can be easily extended to include attractiveness of individual workers and its role in the establishment and maintenance of the 'corporate image'. It is plausible that attractive workers might be preferred or rewarded with higher wages because of the "radiating" effect of attractiveness. This "radiating effect" of attractiveness may be implicitly or explicitly present in hiring practices at least as far as some types of occupations or firms are concerned (cf. Collins, 1975 and his notion of education as a form of 'ethnicity').

"It is a good morning exercise for a research scientist to discard a pet hypothesis every day before breakfast. It keeps him young."
Konrad Lorenz, *On Aggression*

SECTION IV - HYPOTHESES

The social psychological literature generated around the topic of the physical attractiveness phenomenon suggests that looks should not be ignored in studying the macro-level processes through which wage differences are generated. There is some indication that physical appearance might be responsible for the development of differential levels of social competence and hence productivity for individuals of different attractiveness level. It is important to point out that "The onus, however, is on demonstrating that attractiveness *per se* is responsible for enhanced job performance. If characteristics related to attractiveness are responsible (e.g., social skills), then selection of employees should be based on these characteristics, not on attractiveness" (Jackson et al., 1995:118-119). While it may be easier, and certainly less costly, to assess someone's physical attractiveness than his/her level of social skills, this is substantively no different from utilizing sexual or racial stereotypes to exclude less attractive individuals from certain jobs or discriminate against otherwise qualified candidates.

In almost all respects physical attractiveness can be viewed as theoretically isomorphic with race (black and white, for simplicity) and hence its role in the labour market can be studied as another type of thus far largely ignored vestige of particularism. While physical attractiveness is likely to be continuous, not dichotomous, black/white dichotomy also masks underlying status continua such as skin shade, passing or cultural/linguistics styles. Both

physical attractiveness and race rest on a biological sub-stratum, both are somewhat subject to modification by status cues, not least acquired "synthetic substitutes" (e.g., Oxbridge accents and breast augmentations, respectively) and both are mediated by perceptions by others.

Hamermesh and Biddle noted that studying possible wage differentials based on looks might be of broader interest because "it is very difficult to construct a research design that allows one to distinguish labor-market outcomes arising from discrimination against a group from those produced by intergroup differences in unobserved (by the researcher) productivity" (1994:1175). As indicated earlier, most of the research attempting to explain differences in earnings whether based on ascriptive characteristics of workers' (e.g., gender, race), productivity enhancing characteristics (e.g., quality of schooling) or institutional factors (e.g., segregation) have followed along the "human capital" approach. We propose to examine the relationship between physical attractiveness and wages treating the former as marginal to a baseline, human-capital derived equation and to utilize status generalization theory as a social-psychological explanatory device designed to shed some light on why and how people tend to discriminate on the basis of looks in the labour market. Status generalization theory and the human capital approach allow us to make a number of predictions not only about the possible relationship between physical attractiveness and economic success in general but also about various effect modifiers of this relationship such as gender, type of occupation or tenure.

There are several empirically testable hypotheses concerning the relationship between attractiveness and economic success that can be derived from the preceding discussion. These hypotheses will be tested by specifying a

number of models and interactive terms designed to address these issues. The first, more elaborate part, will test plausibility and stability of these hypotheses on wage differentials in a cross-sectional context utilizing three different sets of cross-sectional data. The second part will provide a modest test of the reverse causality between physical attractiveness and economic success by re-estimating identical hypotheses in wage growth models utilizing three different sets of panel data.

Hypothesis no. 1

First, physically attractive workers, all else being equal, should be more economically successful than unattractive workers on the basis of the "spread of relevance" of diffuse status characteristics. That is, attractive workers should be perceived as more competent in *whatever they do* than the less attractive workers and should earn higher wages than the less attractive individuals. Wages of those individuals who were rated as 'average' are expected to fall somewhere in-between. This prediction is based on the assumption that employers, co-workers or customers are likely to have higher expectation states (general and specific) for attractive than for less attractive workers and that perceived competence or perceived productivity (as opposed to actual productivity) will translate into higher wages for attractive workers and lower wages for the less attractive individuals.

This hypothesis can be also restated utilizing more 'economic' language consistent with the informational model of discrimination. More specifically, a productivity signal of more attractive workers as a group is assumed to be more informative (i.e., more correlated with productivity) than a signal of less attractive workers. Because the individual signal carries less weight than the average

group this will translate into higher wages for more attractive workers. This 'global' effect of attractiveness should apply to all workers and to all jobs in cross-sectional specifications. This effect should be considerably diluted or it should disappear altogether in wage growth specifications (i.e., panel models) as the employer's uncertainty about productivity of workers is likely to be reduced and thus the role played by attractiveness in wage growth processes.

Hypothesis no. 2

On the basis of the aggregating assumption of status generalization theory, the highest expectation states should exist whenever attractiveness is combined with other diffuse status characteristics such as gender or race/ethnicity. It is hypothesized, therefore, that attractiveness effects on wages and wage growth, all else being equal, should be higher for males than for females. That is, that attractiveness should have a positive impact on wages and wage growth both for attractive males and females but that this effect should be considerably stronger for male than for female workers. This is because attractive male workers are hypothesized to benefit from the combined effect of two distinctive diffuse characteristics: gender (i.e., male) and physical appearance (i.e., attractive). Conversely, less attractive (i.e., below average) females are predicted to experience the largest pay penalties. It is difficult to anticipate with any degree of precision the magnitude of the effect that attractiveness will have on wages for the remaining combinations of gender and attractiveness beyond stating that they are expected to be linear and should fall somewhere in-between these two extremes. Once again, all these effects are expected to be weaker in wage growth specifications.

Hypothesis no. 3

The multicultural character of Canadian society and the consequent impact that ethnicity has on the social stratification of ethnic membership was pointed out by several different scholars, most notably by John Porter in *The Vertical Mosaic*. Subsequent studies (see Boyd et al., 1985; Pineo and Porter, 1985; Darroch, 1979; Winn, 1985) suggested that the impact of ethnicity on individual occupational mobility and hence wages is declining and restricted to a few specific groups (Herberg, 1990). Although over the years the issue of ethnicity and social class generated heated debate, it is not at all clear whether the membership in one of the 'Charter' groups as opposed to the 'Non-Charter' ethnic groups confers advantages/disadvantages consistent with ethnicity being considered a diffuse status characteristic in Canada.

While it is plausible that certain visible minorities meet the criteria of race/ethnicity as a diffuse status characteristic in Canada the number of workers considered as visible minorities in the CQL data set is not sufficiently large to test this hypothesis empirically. Furthermore, the CQL data contains no information on race hence a country of origin would have to be utilized instead. As a result, respondents from certain countries would be automatically -- and quite arbitrarily -- classified as visible minorities. Because of these difficulties we decided to use the immigrant status (i.e., Canadian-born vs. foreign-born) instead. While being born outside of Canada is not a proxy for race/ethnicity, it was felt that immigrant status itself meets the criteria of a diffuse status characteristic and that it represents a considerable disadvantage in the Canadian labour market. We hypothesized, therefore, that the effect of attractiveness on wages and wage growth, all else being equal, should be higher for Canadian-born than for foreign-born workers. The reverse, that is pay

penalties for below average foreign-born workers, are also anticipated. In other words, the effect of physical attractiveness on wages should be stronger for Canadian-born than for foreign-born workers. Once again, this prediction is based on the combined effect of two diffuse status characteristics according to the aggregating principle of status generalization theory. This effect is expected to be weaker or disappear altogether in wage growth specifications due to the reduced uncertainty about productivity of workers.

Hypothesis no. 4

Although age is also a diffuse status characteristic its combined effect with attractiveness on economic success is more difficult to anticipate. This is in part due to the inverse relationship between age and attractiveness and in part to the multicollinearity between age and the usual measures of on-the-job training such as labour force experience or tenure. Furthermore, while it is true that age meets the criteria of a diffuse status characteristic (i.e., there are at least two different states which are evaluated differentially), its effect can be either positive or negative depending on the context. Because we decided not to separate the influence of age from that of experience, its effect on wages and wage growth will be expressed in terms of the latter (i.e., actual or potential labour force experience). Such an approach allows to capture the possible effect of age and attractiveness on wage profiles in a more context-appropriate and hence less ambivalent terms (i.e., labour force experience as a diffuse status characteristic). Nearly every study of wage determination has reported diminishing returns to age or work experience. That is, that wages increase with age or work experience till about 45-50 (i.e., experience-earnings profiles tend to be concave). These findings support the notion that work experience enhances productivity but also that it serves as a proxy for seniority and, as a

result, older workers should earn more regardless of their actual outputs (Edwards, 1977).

It is important to note that the effect of work experience and wages and its curvilinearity does not appear to be uniform across all occupations (e.g., 'manual' versus 'mental' work; Atkinson, 1983). Nevertheless, given the predominance of occupations where the effect of age 'peaks' at around 45, it is hypothesized that the effect of work experience on wages and wage growth, all else being equal, should be higher for attractive than for unattractive workers due to the combined effect of two diffuse status characteristics. Assuming, that is, that to some degree work experience represents a diffuse status characteristic in the labour market (cf. Treiman and Hartman, 1981). As a result, attractiveness should yield higher returns to wages and wage growth for each additional year of labour force experience for those workers who are attractive than those who are not.

Hypothesis no. 5

Another hypothesis derived from the proposition that the effects of physical attractiveness on wages and wage growth should be higher when explicit information about competence or productivity is more difficult to directly observe than when it is present will be empirically tested. We hypothesize that the effects of attractiveness on wages and wage growth, all else being equal, should be stronger in more 'impersonal' than in smaller or more 'familiar' settings. While there are several different ways in which this concept could be operationalized, none is entirely satisfactory. We decided to use a firm's size as a proxy for 'impersonality of a work setting'. Due to the increased impersonality context (inversely related to a firm's size) diffuse status characteristics such as

attractiveness should have a stronger influence on judgments of productivity or competence than more pertinent but less accessible productivity related information. This is because learning about or observing 'actual' productivity of individual workers is hypothesized to be more difficult in such settings hence non-institutionalized diffuse status characteristics such as physical attractiveness might exert stronger influence on wages.

Hypothesis no. 6

Status generalization theory also suggests how physical attractiveness may influence the development of job-related competence and the perception of this competence by employers, co-workers, customers and the worker himself. If people hold higher generalized expectations about attractive than about unattractive workers, then, according to the theory, attractive workers should: (1) receive and act on more opportunities to enhance their human capital; (2) receive more positive performance evaluations from others; (3) exert more influence on group decisions; and (4) be less likely to accept others' attempts to influence them (adapted from Berger et al. 1985). Differential socialization of individuals who differ in terms of attractiveness or differential treatment within the labour market itself may have resulted, therefore, in a differential development of certain work and productivity related skills such as leadership or self-confidence. The less attractive individuals may have been offered, for example, fewer opportunities to develop these skills or received less positive performance feedback both before entering the labour market (e.g., in the educational system) and within the labour market itself. We can anticipate, therefore, that the more attractive workers should be actually more productive and competent because of the more favourable on-the-job interactions and greater opportunities to enhance their human capital.

It is hypothesized, therefore, that physical attractiveness might be of particular relevance in occupations requiring extensive dealings with the public and positive image projection (e.g., real estate agent, waiter, or sales clerk) where it might constitute a particular advantage or a liability. This prediction is also derived from status generalization theory but there is a twist to it. More specifically, in those jobs or occupations where looks are deemed as relevant (i.e., productivity-enhancing) attractiveness can be viewed as a specific, instrumental status characteristic. Consequently, there should be a positive effect on wages and wage growth, all else being equal, for the more attractive individuals employed in such occupations due to the direct effect of attractiveness on their productivity (e.g., more sales, larger tips, more clients, etc.) and thus wages and wage growth. This prediction can also be restated utilizing the standard human capital terminology where a worker's attractiveness in those jobs or occupations enhances his/her productivity and hence his/her value to the employer.

The ability to detect this effect empirically might be diluted, however, due to the fact that even within finely defined occupations such as lawyer or sales clerk the actual tasks performed may vary considerably and thus the attractiveness requirements might be substantially different even for occupations that were identically coded. It is also plausible that the *type* of attractiveness which is likely to be associated with higher returns might be occupation-specific whereas our measurement of it is not. This productivity enhancing effect of attractiveness on wages and wage growth will be addressed by comparing returns to attractiveness in those jobs or occupations where attractiveness is deemed to be largely irrelevant versus those where it is not. The net difference between the two can be then assumed to represent the

productivity-enhancing contribution of attractiveness. This assumption is consistent with Zelditch (1985) who found that specific status characteristics had stronger effects than diffuse status characteristics on perceptions and behaviour.

The relevance of physical attractiveness in those jobs or occupations might manifest itself by greater prevalence of attractive individuals in those occupations where attractiveness is likely to be rewarded (i.e., where 'social desirability' or 'social skills' enhance productivity). One might expect average looks in those occupations also to be high but it might be possible to detect returns to looks net of occupation. Consequently, some degree of segregation of labour market by appearance is a plausible explanatory alternative. It should be noted, however, that what is meant here is not so much occupational segregation as job segregation and even then it is likely to be far from complete. It is also possible that even in those occupations that are segregated by physical attractiveness (i.e., appearance-related occupations) the pre-selection requirements -- both by the employer and the employee -- would tend to eliminate or drastically reduce any wage advantages associated with one's attractiveness.

Theoretically, one could calculate an aggregate segregation index which measures the percentage of attractive or unattractive workers who would have to change jobs in order for attractiveness differences in occupational distribution to be eliminated. For example, the Duncan measure is calculated using the equation

$$(1) \quad D = (1/2) \sum |(\%U_i) - (\%A_i)|,$$

where $%U_i$ and $%A_i$ are the percentages of unattractive and attractive workers, respectively, employed in occupation i (King, 1992:122). A value of $D = 0$ indicates that there is no occupational segregation, and a value of $D = 100$ indicates complete segregation. In practice, both measuring and testing the segregation by looks hypothesis is somewhat more complex. First, these types of indexes are more appropriate for dichotomous variables such as gender or race and might be difficult to construct for variables which, at least in principal, are ordinal or continuous. Second, in the context of physical attractiveness, one would require a fairly detailed occupational classification that would include description of the actual tasks performed. Finally, one would need a sufficiently large sample size that goes with it.

Because of these difficulties we have opted, instead, to provide a rather crude test of this hypothesis utilizing four broad occupational categories adapted from the sixteen group occupational classification developed by Pineo et al. (1977). This reduction in the number of occupational categories was designed to insure that each occupational and attractiveness category was represented by a sufficient number of cases. It is hypothesized that the effect of physical attractiveness should be small or irrelevant in occupational categories such as 'unskilled' and 'technical' but that it should play a more important role in wage profiles for occupational categories such as 'services' and 'professional' where physical attractiveness might constitute a specific, instrumental status characteristic. We anticipate, therefore, the following rank-ordering of occupational categories with regard to the size of the effect of physical attractiveness on wage profiles: 'unskilled', 'technical', 'professional', and 'services'.

Hypothesis no. 7

It is also hypothesized that the effect of union membership on earnings should vary for individuals who differ in terms of attractiveness. There is some evidence that unions do reduce discriminatory effects among their members especially in terms of some better 'established' diffuse status characteristics such as gender or ethnicity (see Bamberger, Admatidvir, Harel, 1995 on the degree to which unions protect women against gender-based wage and promotion discrimination). If in fact the less attractive individuals are being discriminated against in the labour force (i.e., they are as productive as others but are not perceived as such) then unions and their emphasis on seniority and collective bargaining should bring the earnings of the less attractive individuals in line with individuals who are more attractive. On the other hand, if the more attractive workers are either perceived as more productive or are in fact more productive due to either of the processes specified earlier, then the principle of mediocrity and seniority should reduce the actual earnings of the more attractive individuals vis-à-vis what they would earn on the "free market". This is because wages in the unionized environments frequently remain tied to specific job contents rather than to individual abilities, performance and know-how (Ferland, 1996). It is expected, therefore, that the effect of attractiveness on wages should be negligible in the unionized environments while remaining relatively strong and consistent with the "spread of relevance" principle for the non-unionized workers. This hypothesis is further supported by studies reporting that physical attractiveness is less likely to be a salient evaluative cue in cultural contexts where collectivism (see Dion, Pak and Dion (1990) on physical attractiveness stereotyping among Chinese), rather than individualism, is the basis for the dominant system of values.

Hypothesis no. 8

Recent studies of the wage gap between blacks and whites in the US suggest that there is no black-white wage gap at labour force entry but that one develops as experience accumulates, mainly because blacks reap smaller gains from job mobility (Oettinger, 1996). Drawing on these findings as well as the more favourable effect on job interactions and greater opportunities to enhance human capital predicted by status generalization theory we expect that some of the wage differences based on physical attractiveness might be due to similar mechanisms. In particular, the effect of attractiveness as a diffuse status characteristic is likely to facilitate inter- and intra-employer mobility for the more attractive individuals and hinder it for the less attractive ones. We hypothesize, therefore, that the effect of attractiveness on wage profiles, all else being equal, should yield higher returns for each additional year of job tenure (years with the same employer) for the more attractive than for the less attractive workers.

In other words, physical attractiveness is hypothesized to be responsible for different work histories in terms of intra- and inter- occupational career mobility experienced by individuals of different attractiveness, regardless of their productivity (perceived or actual). The notion of 'implicit labour markets' (Azariadis, 1975; Baily, 1974) where length of tenure with the same employer is taken as a proxy for quality of a match (see, for example, Bartel and Borjas, 1981) was challenged by Granovetter (1988) who suggested that "long tenures may indicate a deficiency of opportunity attributable in part to the details of previous mobility history; short tenures may, conversely, result from ample opportunity rather than poor matches or 'ants' in the pants" (1988:195).

Although not directly testable with the CQL data (due to the small number of 'movers' and restricted time frame), it is plausible that even if the rates of inter-employer mobility are comparable they might differ along the qualitative dimension. That is, job separations for the more attractive individuals may tend to be voluntary and may thus reflect better opportunities (i.e., vertical mobility) whereas job separations for the less attractive workers may tend to be involuntary (e.g., lay-offs, firings, etc.) and may indicate a deficiency of opportunity (i.e., horizontal mobility). It is not unreasonable to speculate, for example, that the less attractive individuals are the last to be hired (and at a lower starting salary) and promoted and the first to be fired, holding everything else constant. These mobility differences are likely to translate into different wage returns based on one's level of attractiveness.

Hypothesis no. 9

We anticipate that attractiveness should have stronger effects on wages and wage growth, all else being equal, when indirect measures of competence or productivity rather than the direct ones are possible or used (see Jackson, 1995). This prediction is based on work concerning the combined effects of diffuse and specific status characteristics conducted by Zelditch (1985). He suggested that diffuse status characteristics are connected to outcomes by longer 'paths' than are specific status characteristics. However, when explicit information about competence or productivity (i.e., 'specific status characteristics') are absent, the effect of a diffuse but not directly relevant status characteristic such as attractiveness should be stronger

This prediction is consistent with research showing that when direct measures of performance are used the effects of attractiveness are small or they

disappear (Baugh and Parry, 1991). Extending this argument to the labour market context, we anticipate that the returns to attractiveness should be higher, all else being equal, in those situations where the direct measurement of productivity is more difficult or impossible than in those where it is easier or more feasible. We hypothesized, therefore, that the effect of attractiveness on wages should be negligible for those workers who reported frequent on-the-job supervision but not for those who were supervised less frequently. There are several different ways in which 'difficulty' in measuring productivity can be operationalized. We decided to use frequency of supervision as a proxy for whether productivity can be assessed directly or not. Other alternatives involved comparing the effects of attractiveness between workers who reported being paid an hourly wage (as a proxy for more direct assessment of productivity) versus those who reported different modes of payment (e.g., monthly or annual salary), or 'mental' versus 'manual' work.

Hypothesis no. 10

We anticipate that attractiveness should have stronger effects on wages and wage growth, all else being equal, as the level of formal schooling increases. This prediction is based on work by conflict theorists who argue that educational credentials are mere window dressing designed to reinforce the existing social-class hierarchy (Collins, 1979). In this framework the use of educational credentials as the mechanism for allocating high-status positions can be viewed, therefore, as a diffuse status characteristic. This hypothesis is based on the aggregating assumption of status generalization theory which claims that the highest expectation states should exist whenever attractiveness is combined with other diffuse status characteristics.

Other plausible hypotheses and interactions

Theoretically, several higher-level interactions involving gender, age, physical attractiveness, type of occupation and a number of other characteristics are plausible. It appears, however, that it would be difficult, if not impossible to reliably estimate these effects with the CQL data set due to the small number of workers meeting these criteria. Status generalization theory predicts, for example, a three-way interaction involving attractiveness, gender and age/experience. The aggregating principle predicts that the highest expectation states should exist whenever attractiveness is combined with other diffuse status characteristics, in this case gender and work experience.

It is also plausible that attractiveness should have a positive effect on the starting salaries of the workers entering the labour force for the first time (or re-entering it after a long absence). One of the reasons why the effects of physical attractiveness are often believed to be especially potent during initial interactions is due to the fact that other, frequently more pertinent information is lacking. Individuals entering the labour force are generally quite limited as to how they can demonstrate their competence or productivity. Apart from formal education, other productivity related characteristics are largely unknown (i.e., specific, job-related status characteristics) and thus the effects of diffuse status characteristics such as race, gender or attractiveness should be particularly strong. This prediction is also consistent with the informational model of discrimination of a more 'noisy' productivity signal. Consequently, physical attractiveness is likely to play an important role in hiring decisions, starting salaries or the type of duties and responsibilities assigned. However, the CQL panel data does not include a sufficient number of individuals who entered (or

re-entered) the labour force for the first time during the period of data collection to test this hypothesis empirically.

The importance of the first occupation is well established in the empirical research on mobility, income and status attainment (see, for example, Duncan, Featherman, and Duncan, 1972). It can be argued, for example, that some of the subsequent effects that physical attractiveness might exert on career trajectories, wages and wage growth is conditioned *via* starting wages of the first full-time occupation. This is particularly likely to happen because, according to status generalization theory, the onus is on demonstrating that attractiveness -- as a diffuse status characteristic -- is not relevant to job performance, instead of the other way around. As noted by Collins, most accounts of mobility have emphasized how dedicated and hard-working the successful individuals have been and "what is missing is the fact that there are a great many people competing, and the proportion of those who succeed is relatively small" (1975:253). It is precisely these types of 'little' advantages stretched over a lifetime that are likely to add up and help us to better understand the variation in wages and wage growth based on attractiveness. While some of this 'initial' effect of attractiveness might wean off as time passes, efficient job mobility which is a major source of wage growth (see Topel and Ward, 1992; Booth, 1997), would be hindered for the less attractive workers. This is because the same mechanism will be invoked every time the less attractive workers change or attempt to change their jobs.

Finally, the studies concerning the role of physical attractiveness and academic performance suggest that the educational attainment itself might be related to one's attractiveness. Consequently, the effects of physical

attractiveness on wage profiles are likely to underestimate the actual effect of this variable by identifying the direct effects only.

Attractiveness: dichotomy, trichotomy or a continuous variable?

Although status generalization theory seems to predict -- and perhaps account -- for a broader range of attractiveness effects than either expectancy theory or implicit personality theory, so far only two studies that we know of, have utilized it to evaluate physical attractiveness effects (i.e., Webster and Driskell, 1983; Jackson et al., 1995). There are some loose ends in the status generalization framework. For example it is unclear whether attractiveness should be treated as a dichotomy (attractive versus unattractive), trichotomy (above average, average, and below average) or a continuous characteristic (e.g., a 5-point Likert scale). A study by Jackson and Ervin (1992) concluded, for example, that shortness is more of a liability than tallness is an asset. One could further speculate that not being unattractive is what matters to get hired and that, thereafter, being attractive contributes to advancement. Or, it might well be that part of gender contextualization, for example, plays out in such a way that women are commonly obliged to reflect an optimal appearance rather than a maximum level of physical attractiveness. Alternatively, we can assume that there is a large group of individuals (the "average looking") who are neither rewarded nor penalized for their "looks". The traditional definitions and theories of wage discrimination emphasize the under-rewarding of individuals in one social category but they are poorly equipped to deal with the over-rewarding of individuals in another social group. More specifically, it is difficult to decide *a priori* which level of attractiveness, if any, should serve as the reference group.

It is unclear whether the effects of attractiveness on wage profiles should be symmetrical or asymmetrical (i.e., workers will be 'rewarded' more for being attractive than 'penalized' for being unattractive). The attractiveness stereotype itself appears to be somewhat asymmetrical. That is, both the existing literature and popular culture are more likely to present attractiveness as being an advantage than unattractiveness as a disadvantage. Furthermore, while favouritism and discrimination are the opposite sides of the same coin, it is usually the latter that generates more excitement and formal protection backed by legal sanctions.

Reverse causality

Webster and Driskell also suggests some interesting implications concerning actual assessments of physical attractiveness that were deliberately down played earlier on,

"It has been remarked jokingly that having a million dollars can make someone much more attractive, though the suggestion there is that what really happens is that people overlook ugliness in those who have money. But if we are correct about the status generalization functioning of attractiveness, what happens is somewhat different from that. Someone with the high state of some status dimension really will be perceived as more attractive than, say, an identical twin who lacks such high status. Thus "the good are beautiful" would be more accurately stated as "the high-status people are beautiful" (Webster and Driskell, 1983:161).

As a result, one of the crucial questions that needs to be addressed is as follows: Does physical attractiveness determine economic success, or does, on the contrary, economic success determine "physical attractiveness", both because the availability of cosmetics or clothes render more beautiful, and because assessors are biased via status generalization in their evaluation of "physical attractiveness".

To complicate matters even further, these relationships appear to be reciprocal. It is argued, for example, that because more attractive people are seen as better at most things they become more successful. Because they are more successful they also become more attractive (Webster and Driskell, 1983). This aspect of attractiveness creates considerable methodological difficulties, especially when the relationships between attractiveness and various outcomes are assessed in a cross-sectional context, as is usually the case. Consequently, in order to examine the effect of attractiveness on economic success we propose to estimate both cross-sectional and dynamic models of economic success (i.e., wage and wage growth differentials, respectively). We hope that by testing a fairly large number of hypotheses both in cross-sectional and quasi-prospective, dynamic manner will be able to establish a pattern that would help us to clarify the direction of the relationship between physical attractiveness and economic success.

SECTION V - DATA SET AND METHODOLOGY

As hinted earlier, there is only one broadly based, representative data set that we know of that contains information on physical attractiveness and wages measured more than once. This feature of the Canadian Quality of Life survey (also known as the multi-wave Social Change in Canada survey) is of great methodological importance as the crucial issues concerning the association between physical attractiveness and economic success involve both replicability of the same results across different data sets and more appropriate assessment of causality and its direction. The use of three representative cross-sectional data sets will allow us to reduce the possibility of chance findings while panel data will allow us "to exploit inter-temporal variation in such a way as to simplify causal inference" (Hannan and Young, 1977:54). It is important to stress that while it is possible to obtain very nearly definitive evidence of causation in some panel studies when a "tight" experimental design can be used or approximated, the Canadian Quality of Life panel data has its problems (e.g., small sample size, restricted time frame, etc.). Nevertheless, the appropriate use of the panel data constitutes a definite advantage over most cross-sectional designs in terms of clarifying causality and reducing the information bias.

The CQL survey data

The data for this study was drawn from the multi-wave national study of social change in Canada (also known as the Quality of Life Survey) conducted by the Institute for Behavioural Research at York University, Canada. The size of the panel sample consisted of 1665 subjects (59.6% females), 18 years and over, interviewed in 1977, 1979, and 1981. The models pertaining to economic success were based on a smaller sample of individuals who reported to be

employed at least in one of the years surveyed. In view of the exploratory nature of this study a two-tailed p value of less than 0.05 was accepted as the minimum criterion for significance. Power calculations were not appropriate as the sample sizes of the cross-sectional and panel data sets were predetermined.

Multiple comparisons may affect the interpretation of the results because the effect of attractiveness on wages and wage growth profiles was tested in a large number of different models, utilizing a number of interactive terms and several 'different' data sets. This means that some 'statistically significant' results may have occurred by chance. The Bonferroni correction was considered but it was rejected as too restrictive. Instead, following the current consensus among researchers, we decided not to formally 'correct' p -values for the number of comparisons made (Thomas et al., 1985; Marshal, 1990; Rothman, 1990). False positive associations are best distinguished from true associations by minimizing potential biases, careful examination of the data, consideration of plausibility, comparison with previous investigations and by testing in future studies. Finally, while chance findings are inevitable when large numbers of statistical comparisons are made, our main objective was to test whether a pattern of relationships based on attractiveness was a plausible one. The probability of correctly identifying chance findings was further increased by repeating identical/similar analyses on three cross-sectional and three panel data sets.

Because of the large number of possible pair-wise comparisons generated by significant interactions we elected not to conduct them. Our primary interest centered on evaluating whether there was a consistent pattern of relationships across different specifications and samples rather than in

conducting a large number of statistical tests on chance findings. The likelihood of chance findings and 'over-fitting' the data increases with complexity of the interactions specified. Moreover, this is particularly likely to happen in the context of relatively small sample sizes. In order to facilitate the interpretation of our results we decided to calculate and graphically depict the effects of physical attractiveness on wage profiles expressed as the unadjusted and adjusted deviations from the grand mean throughout this study.

Methods

Physical attractiveness ratings

There are several outstanding issues concerning the measurement (in terms of reliability, validity, stability) of physical attractiveness and possible differences in terms of attractiveness based on age, gender, employment status or ethnicity. In order to address these issues we examined how these ratings were distributed (e.g., skewness, kurtosis, proportion of individuals in each category of attractiveness in each year, etc.). We also assessed possible age and gender variations in the ratings of attractiveness across the three waves of data by conducting chi-square and analysis of variance (ANOVAs) tests. The variations over time (i.e., 77, 79, 81) and between the two sexes and different age categories in terms of physical attractiveness were assessed by conducting repeated multivariate analyses of variance (MANOVAs). This part of the analyses was designed to determine whether there were any important age or gender differences in terms of the physical appearance assessments and whether these differences were stable over time.

To estimate internal consistency (reliability) among ratings of physical attractiveness, Cronbach's alphas were used. That is, we assessed the extent to which the same individuals rated in 1977, 1979, and 1981 received proportionally similar attractiveness scores. We also conducted a number of subgroup reliability analyses (i.e., age, gender, and employment status) designed to assess whether there was a group of subjects whose ratings were particularly consistent/inconsistent over time. While, as indicated earlier, this particular approach to reliability and interrater agreement is far from ideal, this is how physical attractiveness ratings are normally handled in social psychological studies (see critique by Shrout and Fleiss, 1979; Tinsley and Weiss, 1975).

Methodologically, the issues of reliability, stability and the inter-judge agreement would be of considerable importance had we decided to utilize ratings of attractiveness averaged across three waves of the CQL survey. However, we have decided against such an approach as we felt that the potential problems far outweigh the benefits. The major advantage of collapsing these three ratings would be a questionable improvement in the reliability estimate of attractiveness. Questionable, because the measurement error would be confounded with actual changes in terms of attractiveness over time. The major disadvantage of such an approach would be a potentially hopeless mixing up of the cause and effect sequence in the relationship between physical attractiveness and economic success.

Theoretically, the measurement issues are crucial as the measurement errors would lead to biased estimates of the association between physical attractiveness and economic success. As indicated earlier, if measurement

errors are random, the bias would be toward finding no association between the two. However, if measurement errors are systematic (non-random), this would lead to potentially serious mis-specification of the association between physical attractiveness and economic success.

The issue of what factors or characteristics were associated with ratings of physical attractiveness, while of primary concern, was difficult to address directly. First, because the number of factors that might have potentially influenced (or be correlated with) these ratings was very large indeed. Second, because the most prominent sources of potential bias in those ratings such as age, gender, or social class (*via* education or occupation) were adjusted for in the multivariate models of wage profiles. Third, because as noted by Webster and Driskell,

"The reason we see the components of attractiveness - what is considered beautiful - as less important than its operation - through status generalization - is that the former change greatly in a short period of time. The theoretical process of status generalization should be invariant through time and culture. That is, whatever meets the definition of a diffuse status characteristic in a particular time and place will have predictable effects; and so long as attractiveness is a status characteristic, whatever the prevailing standards of beauty are, "beautiful" people will have certain strong advantages as a result." (1983:160).

Finally, because while the issue of what attractiveness is and what are its determinants plays an important role in cross-sectional models it becomes less of an issue in wage growth models where lagged effects of attractiveness were used.

Wage differentials and wage growth models

The wage and wage growth models were estimated using two complimentary statistical approaches: Multivariate Analysis of Variance (MANCOVAs) and Ordinary Least Square (OLS) regression models. The data were analyzed with the use of SPSS software (version 4.0 for Macintosh, SPSS Inc., Chicago, 1990). The dependent variable, hourly wages, was log transformed (natural logarithm) to achieve a better empirical fit and eliminate heteroscedastic variances caused by skewness of the wage distribution. Most of the variables used in our models are familiar and require little explanation. Table 5.1 identifies all the variables used and provides a brief operational description of each.

The multivariate analysis of variance (MANCOVAs) were used to test the overall differences in terms of wage profiles based on physical attractiveness and its interactions with hypothesized factors such as gender, labour force experience, union membership and so forth. Both unadjusted and adjusted (for all covariates) effects were tested for each hypothesis and mean wage deviations (unadjusted and adjusted) from the grand mean were calculated and depicted graphically.

The second set of results was based on the unstandardized regression coefficients (β - slopes) for the effect of physical attractiveness ratings measured on a 3-point Likert type scale *within* each of the interactive factors both before and after adjusting for covariates. These estimates provided a more direct and interpretable test of the hypothesized (linear) relationships between physical attractiveness and wages. This is because the estimated slopes contain three

distinct pieces of information directly pertinent to each hypothesis: direction, magnitude and statistical significance level.

In addition, for the hypothesis no. 1, the reduced-form earnings equation (OLS) that included key human capital variables (schooling, work experience, work experience in quadratic form, and job tenure), gender (male) and coverage by collective bargaining (union membership) were estimated. The goal of these models was not only to assess the additional effect of physical attractiveness on earnings once the key human capital variables were accounted for but also to provide a baseline model comparable to those commonly estimated in the economic literature. The final models for this hypothesis also included several different codings for physical attractiveness variable, marital and foreign-born status, employment in the public sector and province/region of Canada. In addition, several dummy institutional variables (occupational category, firm size, frequency of supervision and) were also included for the purpose of estimating the hypothesized interactive effects. The variable 'frequency of supervision' was coded 1 for those respondents who reported daily on-the-job supervision (i.e., 'several times a day' and 'once, twice a day'). The variable 'firm size' was coded 1 for those workers who reported employment in companies with 50 or more employees. Most of the remaining data were conventionally measured and do not require much discussion. Finally, in all our remaining models variable measuring physical attractiveness using the 3-point classification ('Below Average'; 'Average'; 'Above Average') was also included.

Identical models (MANCOVAs and OLS) were estimated for each wave utilizing the year appropriate data for time-variant variables. The data

concerning employment in the public sector and firm size was not available in the 1977 wave as was the region/province of residence in 1981 data hence these variables were excluded both from the cross-sectional and panel analyses, as appropriate. An F-ratio was used to test the increment in the R^2 for statistical significance of each of the interactive terms (Cohen, 1969).

The wage growth models were estimated utilizing identical variables to those used in the cross-sectional models. The only difference was that we adjusted/regressed log hourly wages at time t on a set of predictors including log hourly wages and attractiveness ratings assessed at time $t-1$. The main advantage of such an approach was that the ratings of attractiveness were not 'contaminated' by economic success at time t and that the effects of attractiveness on wage growth were adjusted for wages at time $t-1$. The main disadvantage of such an approach was that statistical significance of the coefficients might have been potentially overstated, since the wage growth disturbance terms in consecutive periods for a given individual were correlated (potential misspecification because of correlated errors in the log hourly wage variables). This was partially addressed by re-estimating the wage growth equations using only 'non consecutive' observations (i.e., estimating log hourly wages in 1981 on log hourly wages and attractiveness ratings in 1977).

The logic of such an approach was based on the assumption that wages and a variety of human capital or institutional variables measured at an earlier point in time $t-1$ (1977) should have significant effects on wages of the same individuals at a time t (1979 and 1981). If, in fact, the economic success biased the assessment of physical attractiveness at time $t-1$ (1977) then the independent effect of appearance on the log hourly wages at time t (1979),

Table 5.1 Measurement of variables in the analyses

Variable	Definition and Measurement
Log hourly wages (77, 79, 81)	Natural logarithm (log) of 1977, 1979, and 1981 hourly wages (\$).
Education (77,79,81).....	Years of school completed.
Job tenure (77,79,81)	Years with the same employer.
Job tenure ² (77,79,81).....	Years with the same employer - quadratic form.
Experience (77,79,81).....	Actual or potential (i.e., age - years of education - 6) labour force experience (years).
Experience ² (77,79,81).....	Labour force experience - quadratic form.
Union membership (77,79,81).....	Dummy variable equal to 1 if respondent was a union member.
Male	Dummy variable equal to 1 if respondent was male.
Supervision (77,79,81).....	Dummy variable equal to 1 if daily on-the-job supervision (i.e., 'several times a day' and 'once, twice a day').
Married (77,79,81).....	Dummy variable equal to 1 if respondent was married, common law or widowed.
Foreign-born	Dummy variable equal to 1 if respondent was born outside of Canada.
Firm size ^a (79,81).....	Dummy variable equal to 1 if respondent worked in firm with 50 or more employees.
Region/province ^b (77,79).....	Geographic region/province of residence dummies (B.C., Prairies, Ontario ^c , Quebec, Atlantic).
Occupation (77,79,81).....	Dummy occupational variables: professionals, managers, technicians, supervisors, skilled service workers, craftsmen, semi-skilled service workers, unskilled workers ^c .
Public sector ^a (79,81).....	Dummy variable equal to 1 if respondent was a government employee.
Attractiveness (77,79,81).....	5-point Likert scale (5 "Striking"; 1 "Homely"); Dummy attractiveness variables (above average, average ^c , below average).
a Not available in 1977 b Not available in 1981 c Reference category	

controlling for wages and other productivity enhancing characteristics at time $t-1$ should be either substantially reduced or it should disappear altogether. If physical attractiveness continues to be a significant predictor of wages at time t it can be concluded that it constitutes an independent predictor of wage growth. Three different sets of wage growth models were estimated: log hourly wages in 79 on log hourly wages and looks in 77, log hourly wages in 81 on log hourly wages and looks in 79, and log hourly wages in 81 on log hourly wages and looks in 77.

SECTION VI - RESULTS

Measurement and distribution of physical appearance ratings

The ratings of attractiveness in the Quality of Life Survey were based on the interviewer's assessment of the respondent's physical appearance which were made towards the end of a long interview conducted in the respondent's home. The respondents who were part of the panel data (n=1675) had, therefore, their physical appearance assessed at three different times by three different interviewers at two-year intervals (1977, 1979, and 1981). A five-point Likert scale was used each time to rate the respondent's physical appearance. The following five categories were used: (1) 'striking', (2) 'good looking', (3) 'average', (4) 'quite plain', and (5) 'homely'. In all our subsequent analyses these categories were inverted (i.e., 5 "Striking"; 1 "Homely") and collapsed into three categories. The wording of the physical appearance question utilized in the CQL was designed to partially control for possible age and sex confounding by instructing interviewers to assess physical appearance of the respondent's appropriate for their age and sex. The interviewers, who assessed physical appearance of the respondents, were relatively similar in certain key respects. Virtually all were female, most were in the 30-35 age range, all were formally trained before entering the field, and most were non-students (Roszell, Kennedy and Grabb, 1989:557).

The mean age of participants in 1977 was 42.2 (SD =16.1; range 18-88; median = 39), 59.6% were women. Of the 1675 participants, 1628 (97.2%) had their physical appearance rated at each wave of the study. The overall distribution of physical attractiveness ratings in each year as well as according

to the respondent's gender and age for all three waves of the survey are presented in tables 5.2, 5.3, and 5.4. Table 5.5 presents descriptive statistics of physical appearance ratings treated as a quasi-interval measure (i.e., the original 5-point Likert-type scale).

Table 5.2 indicates that the majority of respondents were rated as 'average' looking each year (from 55.7% to 60.0%) and that the overall proportion of individuals assigned to each of these five categories remained almost unchanged over time. Approximately a third of the respondents were rated as above average each year (i.e., 'good looking' and 'striking') while 7-8% were considered as below average (i.e., 'quite plain' and 'homely'). A very small proportion of respondents were rated as either 'striking' (around 2%) or homely (under 1%).

Table 5.2 Distribution of physical appearance ratings. The CQL panel data (n ^a =1653-1655)			
Physical appearance	1977 (n=1655)	1979 (n=1650)	1981 (n=1653)
Homely	12 (0.7%)	9 (0.5%)	8 (0.5%)
Quite plain	130 (7.9%)	121 (7.3%)	107 (6.5%)
Average	922 (55.7%)	979 (59.3%)	991 (60.0%)
Good looking	550 (33.2%)	508 (30.8%)	518 (31.3%)
Striking	41 (2.5%)	33 (2.0%)	29 (1.8%)
^a Not every respondent rated each year			

As indicated earlier, the issue of gender differences received a considerable amount of attention in relations to the physical attractiveness phenomenon. Table 5.3 indicates that, at least when it comes to physical

appearance ratings, there were no gender differences. That is, the proportion of males and females classified into each of the physical appearance categories were almost identical in each year.

Table 5.3 Distribution of physical appearance ratings by gender. The CQL panel data (n^a=1653-1655)						
Looks	1977^b		1979^b		1981^b	
	Males (n=668)	Females (n=987)	Males (n=665)	Females (n=985)	Males (n=665)	Females (n=988)
Homely	5 (0.7%)	7 (0.7%)	3 (0.5%)	6 (0.6%)	2 (0.3%)	6 (0.6%)
Quite plain	41 (6.1%)	89 (9.0%)	43 (6.5%)	78 (7.9%)	52 (7.8%)	55 (5.6%)
Average	387 (57.9%)	535 (54.2%)	397 (59.7%)	582 (59.1%)	391 (58.8%)	600 (60.7%)
Good looking	215 (32.2%)	335 (34.0%)	210 (31.6%)	298 (30.3%)	205 (30.8%)	313 (31.7%)
Striking	20 (3.0%)	21 (2.1%)	12 (1.8%)	21 (2.1%)	15 (2.3%)	14 (1.4%)
^a Not every respondent rated each year ^b Not significant by chi-square test (p>.10)						

Table 5.4 provides some evidence that the absence of differences based on gender were probably not due to the fact that the interviewers were instructed to assess physical appearance of the respondent's appropriate for their age and sex. Or, alternatively, that it was much easier for the interviewers to adjust their ratings of physical attractiveness to reflect gender-specific criteria than it was to ignore the respondent's age. The respondents were divided into

two age categories based on the median value of age in the sample in 1977, 79, and 81 (i.e., 39, 41, and 43 years old, respectively).

Table 5.4 Distribution of physical appearance ratings by age ^a . The CQL panel data (n ^b =1653-1655)						
Looks	1977 ^c		1979 ^c		1981 ^c	
	≤39 (n=841)	>40 (n=814)	≤41 (n=837)	>42 (n=813)	≤43 (n=838)	>44 (n=815)
Homely	2 (0.2%)	10 (1.2%)	3 (0.4%)	6 (0.7%)	2 (0.2%)	6 (0.7%)
Quite plain	48 (5.7%)	82 (10.1%)	49 (5.9%)	72 (8.9%)	42 (5.0%)	65 (8.0%)
Average	426 (50.7%)	496 (60.9%)	472 (56.4%)	507 (62.4%)	480 (57.3%)	511 (62.7%)
Good looking	337 (40.1%)	213 (26.2%)	284 (33.9%)	224 (27.6%)	289 (34.5%)	229 (28.1%)
Striking	28 (3.3%)	13 (1.6%)	29 (3.5%)	4 (0.5%)	25 (3.0%)	4 (0.5%)

^a Median split
^b Not every respondent rated each year
^c All differences significant by chi-square test (p<0.0001)

In each year there were statistically significant age-group differences in physical attractiveness ratings. The younger respondents were somewhat less likely to be rated as below average (i.e., 'quite plain' and 'homely') and more likely to be rated as above average (i.e., 'good looking' and 'striking') in each wave of the survey. This finding was consistent with our expectations but it suggested that the interviewers were unable, even when specifically instructed to do so, to provide age-free assessment of the respondents' physical appearance.

Table 5.5 Selected descriptive statistics of physical appearance ratings^a. The CQL panel data (n^b=1650-1655)

Statistic	1977 (n=1655)	1979 (n=1650)	1981 (n=1653)	Average ^c (n=1655)
Mean	3.29	3.26	3.27	3.28
SD	0.68	0.64	0.63	0.49
Kurtosis	0.46	0.55	0.55	0.66
Skewness	-0.08	0.02	0.03	-0.11

^a Recoded (5 "Striking"; 1 "Homely")
^b Not every respondent rated each year
^c Mean score of three ratings

Table 5.5 shows selected descriptive statistics of physical appearance ratings treated as a quasi-interval measure. The mean ratings for a full panel sample as well as the standard deviations, kurtosis, and skewness were practically identical in each wave of the study. The median was 3 (i.e., 'average') and was just below the mean of 3.28, suggesting that the distribution is slightly asymmetrical. A similar conclusion can be reached by referring to the index of skewness. This index is the average of the cubed standard scores (i.e., z-values) of the distribution. If the average of the cubed standard values is 0, the distribution is symmetric, suggesting that the extreme values are evenly distributed above and below the mean. Kurtosis refers to both the peak (i.e., the center of the distribution), and tails of the distribution. The kurtosis of a distribution is computed as the average fourth power of the standard deviation minus 3. A distribution may be characterized as leptokurtic (i.e., extremely peaked with "slim" tails), platykurtic (i.e., extremely flat with "fat" tails), or mesokurtic (i.e., modestly peaked with modest tails). For a normal distribution the average fourth power of the standard deviation is exactly 3. Since by

convention 3 is subtracted from the average fourth power, the kurtosis of a normal (i.e., mesokurtic) curve is 0. For physical appearance ratings the kurtosis ranged from 0.46 to 0.66, indicating that the distribution was slightly leptokurtic.

To assess the changes over the course of the study (4 years) on physical appearance ratings, 2 x 2 x 3 MANOVAS were performed examining gender (males vs. females) and age (≤ 39 vs. > 40 years old in 1977) differences over the three assessment periods treated as a repeated measure. The multivariate F ratios cited were based on Pillai's criterion, although similar or identical F ratios were obtained with Wilks' lambda criterion and with Hotelling's criterion. Table 5.6 displays the results of these analyses.

Table 5.6 Means and standard deviations of physical appearance ratings ^a by respondent's age and gender (MANOVAs). The CQL panel data (n ^b =1628)					
Sex	Age	1977 Mean (SD)	1979 Mean (SD)	1981 Mean (SD)	Effect ^c
Male (n=658)	≤39 (n=318)	3.45 (.65)	3.37 (.61)	3.38 (.67)	Age Age x Time
	>40 (n=340)	3.16 (.64)	3.19 (.63)	3.17 (.60)	
Female (n=970)	≤39 (n=508)	3.37 (.67)	3.32 (.69)	3.33 (.61)	
	>40 (n=462)	3.17 (.68)	3.18 (.61)	3.22 (.61)	

^a Recoded (5 "Striking"; 1 "Homely")
^b Not every respondent rated each year
^c p < 0.05

As expected, there was a significant age effect, $F(1,1624) = 63.1$, $p < .0001$, revealing significant differences by age group in ratings of physical appearance for all subjects over the study period. Both younger males and females were assessed as significantly more attractive (≤ 39) than older males

and females (>40) [mean attractiveness rating = 3.37 vs. 3.18, respectively]. In addition, there was a significant Age x Time interaction, $F(2,1623) = 3.62$, $p = 0.027$. The follow-up univariate analyses showed a statistically significant drop in physical attractiveness ratings for younger individuals between the 1977 and 1979 assessments [$F(1,825) = 5.80$, $p = 0.016$] from 3.40 to 3.34. There were no other statistically significant differences. The multivariate analysis of covariance (MANCOVA), using respondent's age as a covariate, failed to produce any statistically significant effects for gender ($F[1,1619] = 0.43$, $p = 0.51$), for changes over time ($F[2,1617] = 0.32$, $p = 0.73$), or for the interaction between the two ($F[2,1617] = 0.49$, $p = 0.49$) on physical appearance ratings.

Reliability assessment

To estimate internal consistency (reliability) among ratings of physical attractiveness, Cronbach's alphas were calculated. The overall internal reliability of physical appearance ratings was 0.60. Table 5.7 summarizes analyses designed to determine whether there was a sub-group of subjects whose assessment of physical appearance across three points in time tended to be more/less internally reliable than that obtained for the full sample. While there were some variations, they appear to be fairly random in nature.

Both the overall and sub-group Cronbach's alphas were relatively low thus suggesting measurement problems due either to the actual change in terms of attractiveness for a substantial number of respondents, lack of inter-judge agreement or both. As indicated elsewhere, Feingold (1992) conducted meta-analysis of reliability coefficients of physical attractiveness ratings and he calculated that the average reliability was .83 across 63 studies. Of particular relevance for our purposes were those studies that utilized three judges as this

is the same number of raters/interviewers that assessed physical appearance of the respondents in the CQL survey. Overall, Feingold reported on 13 studies (8 published) that utilized three judges to rate physical attractiveness. Six studies were based on 'live' assessments and the remaining seven on ratings based on photos. The number of subjects ranged from 20 to 86 (mean = 52 subjects), all studies utilized college students, in seven studies the subjects were females, in five they were males and one study utilized subjects of both sexes. The interjudge correlations ranged from .32 to .72 (mean = .49) and the corresponding reliabilities (Cronbach's alphas) ranged from .59 to .89 (mean = .74).

Given considerably larger sample size, less 'controlled' setting, a two-year interval separating each assessment and a tendency for more methodologically sound studies to be published, the overall reliability of .60 calculated for the CQL panel falls, nevertheless, within the lower boundary of 'acceptable' reliabilities in social-psychological research. However, as demonstrated elsewhere (see Table 1.1), the internal reliability coefficient (Cronbach's alpha) not only can be easily increased simply by utilizing more judges but it also fails to capture the actual inter-judge agreement. For example, assuming an identical inter-judge correlation as the one found in the CQL panel data (i.e., $r = .34$) and simply increasing the number of judges from three to five would result in a considerably more 'acceptable' reliability coefficient of .72. In the present context these Cronbach's alphas should be interpreted as a measure of the consistency or stability of the physical attractiveness ratings over time and not as reflecting the inter-judge agreement.

Table 5.7 Internal reliability coefficients of physical appearance ratings^a.

Group	n	Cronbach's alpha
Overall	1628	0.60
By gender		
Females	970	0.61
Males	658	0.58
By age		
18 - 29	431	0.57
30 - 39	390	0.61
40-49	283	0.55
50-59	247	0.63
60+	272	0.56
By age & gender		
males 18-29	174	0.47
females 18 -29	257	0.62
males 30-39	142	0.66
females 30-39	248	0.58
males 40-49	116	0.49
females 40-49	167	0.59
males 50-59	116	0.58
females 50-59	131	0.67
males 60+	108	0.58
females 60+	164	0.53
By employment status^c	600	0.63

^a Recoded (5 "Striking"; 1 "Homely")
^b Not every respondent rated each year
^c Respondents who reported employment income in 1977,79, and 81

Table 5.8 shows the proportion of respondents who received identical attractiveness ratings in any two and in all three assessment periods. Of the 1628 subjects whose physical appearance was assessed at each time, 35.4% (576) were rated identically all three times. The vast majority (98.8%) of those

subjects who received identical ratings belonged to 'average' (436 respondents) and 'good looking' (133 respondents) categories. In fact, there was only one respondent who was rated each time as 'homely', one that was rated as 'striking' and five respondents who were rated as 'quite plain'. It is very difficult to assess how much of this variation can be attributed to the 'true' change in attractiveness over time and how much to the 'measurement error' (i.e., lack of agreement) . At the risk of shooting ourselves in the foot, we wonder whether the use of internal reliability approach to 'assess inter-judge agreement' in social psychological research might not be responsible for creating an illusion that the issues of measuring physical attractiveness is already satisfactorily resolved.

Table 5.8 Proportion of respondents who received identical physical appearance ratings at different waves of the CQL survey (n^a=1628-1643)

Wave	% (n)
1977 & 1979 (n=1640)	54.7% (897)
1979 & 1981 (n=1638)	57.1% (936)
1977 & 1981 (n=1643)	53.5% (879)
1977 & 1979 & 1981 (n=1628)	35.4% (576)

^a Not every respondent rated each year

RESULTS

CROSS-SECTIONAL SPECIFICATION

Cross-sectional specifications

Table 6.1 presents summary statistics for the final samples utilized in cross-sectional wage specifications. In all, there were six different sets of data derived from the CQL survey: three cross-sectional and three panel samples. Both the cross-sectional and panel samples excluded observations for which data were unavailable to form the required measures. In addition, our analyses were restricted to those observations for which estimated hourly wages were between \$1.00 and \$60.00. This restriction on the wage range was imposed in order to exclude a total of 11 observations for which measurement or coding errors were likely (5 cases in 1979 and 6 in 1981). No additional restrictions or exclusion criteria were placed on our samples. In all models, the dependent variable was $\log(\text{hourly wages})$ calculated with the year appropriate data. Some of the variables were not available in each wave of the survey or the questions on which they were based were asked/coded differently (see footnotes in Table 6.1 for details). They were excluded from the year-specific analyses, as appropriate.

The 1977 hourly wages were calculated as annual salary from the job (in hundreds) divided by 50 times respondent's normal weekly hours ($[\text{annual salary} \times 100] / [50 \times \text{average weekly hours}]$). The 1979 and 1981 hourly wages were based on the respondents answers to the following questions: 'How much money do you make at this job, before taxes and other deductions are taken out?' Respondents were subsequently asked whether this amount was an hourly, daily, weekly, monthly or yearly rate. They were also asked how many hours per week they normally worked at their main job. These responses were utilized to calculate the hourly wages as follows:

- $\text{hourly rate} = \text{hourly rate (dollars + cents)}$
- $\text{daily rate} = (\text{daily rate} / [\text{normal hours per week}/5])$
- $\text{weekly rate} = (\text{weekly rate} / \text{normal hours per week})$
- $\text{monthly salary} = (\text{monthly salary} / [\text{normal hours per week} * 4.16])$
- $\text{yearly salary} = (\text{yearly salary} / [\text{normal hours per week} * 50])$.

The number of usable observations ranged from 787 to 910 in cross-sectional samples and from 659 to 714 in panel samples. The average hourly wages (before transformations) in cross-sectional samples ranged from \$7.32 in 1977 to \$10.45 in 1981. In the 1977 sample labour force experience was measured as follows: 'Respondent's age' - 'his/her years of formal schooling' - '6'. Because the education variable in 1977 was not based on actual years of formal schooling but on several categories representing different levels of educational attainments these were replaced with values corresponding to average number of years of formal schooling required for each of these levels (as estimated in the 1979 and 1981 samples). The potential labour force experience calculated using the education variable constructed in this manner resulted in 6 negative values; these were all set to 0. In the 1979 and 1981 samples experience was calculated by subtracting the year of the first full-time job (last two digits) from the year of the interview (i.e., 79 and 81, respectively). Occupational variables were constructed by applying the socioeconomic classification of occupations developed by Pineo, Porter and McRoberts (1977) to census codes based on the Canadian Classification and Dictionary of Occupations (known as the CCDO codes). The original 16 group classification was subsequently recoded into eight, and in some analyses, four occupational groupings (see Table 6.15 for details).

Table 6.1 Summary statistics: cross-sectional samples

Variable		1977 (n=787)	1979 (n=807)	1981 (n=910)
Nominal hourly wages (\$)		7.32 (4.49) ^a	8.67 (6.25)	10.45 (6.82)
Education (in years)		12.73 (3.48)	12.69 (3.76)	12.87 (3.75)
Experience (in years)		19.36 (13.73)	20.63 (13.12)	21.52 (12.56)
Job tenure (in years)		8.38 (8.65)	8.31 (8.66)	9.04 (8.77)
Union membership		.39	.36	.35
Public sector ^b		—	.34	.27
Frequency of supervision (daily)		.25	.19	.18
Male		.61	.55	.53
Married		.73	.75	.77
Foreign born		.20	.20	.19
Occupation	Professionals	.17	.14	.15
	Managers	.08	.09	.09
	Technicians	.08	.11	.10
	Supervisors	.07	.09	.09
	Skilled service workers	.10	.12	.12
	Craftsmen	.20	.16	.13
	Semi-skilled service workers	.19	.18	.19
	Unskilled workers	.11	.11	.13
	Firm size (50+) ^b	—	.66	.64
Region/province^c	Atlantic	.10	.09	—
	Quebec	.30	.30	—
	Ontario	.39	.39	—
	Prairies	.13	.12	—
	B.C.	.08	.10	—
Attractiveness	Looks (mean, SD)	3.34 (.66)	3.29 (.63)	3.30 (.62)
	Above Average	.37	.33	.34
	Average	.56	.60	.60
	Below Average	.07	.07	.06

^a Standard deviations appear in parentheses^b Not available in 1977^c Coded differently in 1981

Tables 6.2, 6.3, and 6.4 present summary statistics for cross-sectional samples in 1977, 1979, and 1981 in terms of physical attractiveness ratings. As expected, those workers who were rated as 'average' looking were most numerous, followed by 'above average', and 'below average' looking individuals. The hourly wages of workers who differed in terms of attractiveness followed an identical pattern in each wave of the survey. Namely, wages of the 'above average' workers were consistently the highest (\$7.98, \$9.29, \$11.02), followed by those who were rated as 'average' (\$7.00, \$8.49, \$10.22) and 'below average' looking (\$6.32, \$7.20, \$9.45), respectively.

Utilizing wages of the 'average' looking workers in each year as a reference category, workers rated as 'above average' earned from 8% to 14% higher wages while those rated as 'below average' earned from 8% to 15% lower hourly wages than those who were rated as 'average'. However, these differences in hourly wages based on worker's level of attractiveness were also accompanied by equally persistent differences in terms of some key human capital variables such as years of formal education, labour force experience, occupation or job tenure. The data presented in these tables immediately beg the question of how much of the other difference in workers' measured characteristics account for the observed wage gap by physical attractiveness ratings. If all or a substantial part of this gap can be explained in terms of human capital differences than the evidence for attractiveness as a determinant of economic success would be considerably weakened. On the other hand, if after adjusting for other measured characteristics the wage gap persists, this would provide some support that beauty plays a role in labour market relations. Some support, because it is difficult if not impossible to ascertain 'what causes what' on the basis of data that was collected at a single point in time.

Table 6.2 Summary statistics by physical attractiveness ratings

Cross-section: 1977 (n=787)

Variable	Above average (n=293)	Average (n=442)	Below average (n=52)
Nominal hourly wages (\$)	7.98 (5.35) ^a	7.00 (3.73)	6.32 (4.66)
Education (in years)	13.49 (3.53)	12.43 (3.37)	10.96 (3.20)
Experience (in years)	16.23 (12.82)	20.90 (13.82)	23.88 (14.65)
Job tenure (in years)	7.36 (7.54)	8.98 (9.03)	9.06 (10.67)
Union membership	.38	.40	.40
Public sector ^b	—	—	—
Frequency of supervision (daily)	.27	.23	.29
Male	.58	.64	.58
Married	.69	.77	.63
Foreign born	.17	.21	.35
Occupation			
Professionals	.19	.16	.06
Managers	.10	.06	.06
Technicians	.10	.08	.04
Supervisors	.10	.08	.06
Skilled service workers	.11	.10	.00
Craftsmen	.14	.21	.33
Semi-skilled service workers	.21	.17	.31
Unskilled workers	.05	.14	.14
Firm size (50+) ^b	—	—	—
Region/province			
Atlantic	.08	.12	.10
Quebec	.30	.30	.33
Ontario	.42	.35	.41
Prairies	.12	.14	.10
B.C.	.08	.09	.06

^a Standard deviations appear in parentheses^b Not available in 1977

Table 6.3 Summary statistics by physical attractiveness ratings

Cross-section: 1979 (n=807)

Variable	Above average (n=270)	Average (n=484)	Below average (n=53)
Nominal hourly wages (\$)	9.29 (6.57) ^a	8.49 (6.27)	7.20 (3.38)
Education (in years)	13.37 (3.74)	12.34 (3.76)	12.49 (3.36)
Experience (in years)	18.76 (12.76)	21.52 (13.21)	22.09 (13.27)
Job tenure (in years)	7.48 (7.76)	8.66 (9.00)	9.38 (9.64)
Union membership	.32	.39	.28
Public sector	.35	.33	.30
Frequency of supervision (daily)	.19	.20	.15
Male	.52	.56	.49
Married	.71	.77	.74
Foreign born	.22	.19	.19
Occupation			
Professionals	.17	.12	.17
Managers	.10	.08	.13
Technicians	.11	.11	.06
Supervisors	.09	.10	.02
Skilled service workers	.13	.11	.15
Craftsmen	.14	.18	.17
Semi-skilled service workers	.16	.19	.21
Unskilled workers	.10	.11	.09
Firm size (50+)	.67	.64	.66
Region/province			
Atlantic	.07	.10	.15
Quebec	.27	.32	.28
Ontario	.41	.37	
Prairies	.13	.12	.15
B.C.	.12	.09	.04

^a Standard deviations appear in parentheses

Table 6.4 Summary statistics by physical attractiveness ratings

Cross-section: 1981 (n=910)

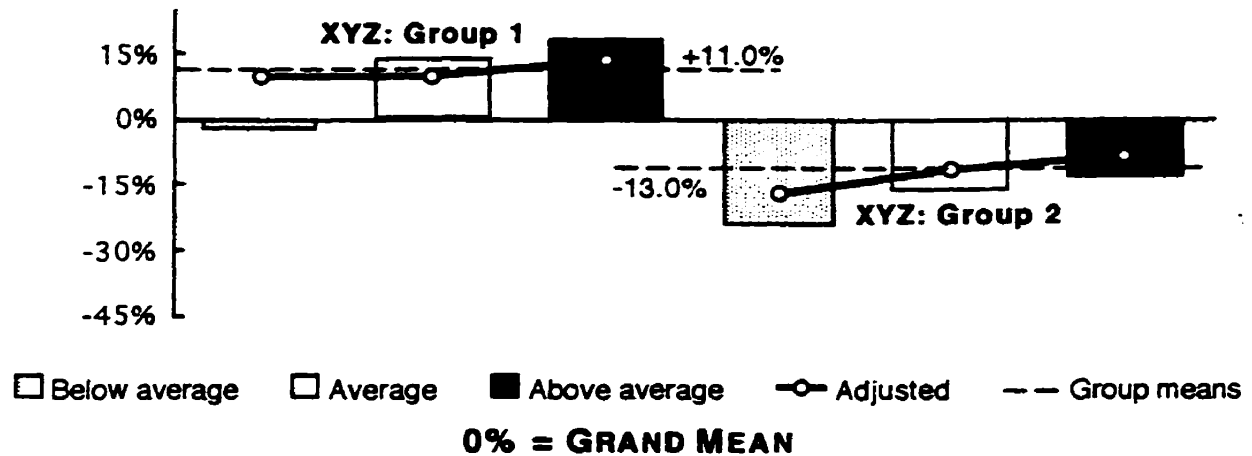
Variable	Above average (n=311)	Average (n=546)	Below average (n=53)
Nominal hourly wages (\$)	11.02 (7.66) ^a	10.22 (6.27)	9.45 (6.81)
Education (in years)	13.42 (3.49)	12.72 (3.87)	11.25 (3.46)
Experience (in years)	19.65 (11.97)	22.10 (12.68)	26.43 (13.06)
Job tenure (in years)	7.70 (7.36)	9.71 (9.27)	10.08 (10.20)
Union membership	.33	.36	.42
Public sector	.26	.28	.21
Frequency of supervision (daily)	.16	.17	.28
Male	.54	.51	.66
Married	.76	.78	.75
Foreign born	.19	.21	.13
Occupation			
Professionals	.16	.15	.11
Managers	.10	.08	.04
Technicians	.12	.10	.06
Supervisors	.10	.08	.11
Skilled service workers	.14	.11	.04
Craftsmen	.11	.14	.19
Semi-skilled service workers	.18	.20	.17
Unskilled workers	.09	.14	.28
Firm size (50+)	.62	.66	.58
Region/province ^b			
Atlantic	—	—	—
Quebec	—	—	—
Ontario	—	—	—
Prairies	—	—	—
B.C.	—	—	—

^a Standard deviations appear in parentheses^b Not available in 1981 (coded differently)

In order to accommodate the MANCOVA approach to test the interactive terms involving physical attractiveness and variables measured on the interval scale such as years of labour force experience, tenure, and years of schooling, the latter were recoded into trichotomies. More detailed information concerning these recodings is provided later on in the appropriate sections of the text. To facilitate the interpretation of all our results based on the MANCOVA approach, the effects of physical attractiveness alone and conditioned by other factors on wage profiles are reported and graphically depicted as both the unadjusted and adjusted deviations from the grand mean for all the hypotheses tested.

The sample figure below (Figure 0) illustrates how the deviations from the grand mean in terms of log(hourly) wages were plotted for each hypothesis. The value of 0% represents the grand mean (unadjusted and adjusted for covariates), the three bars (■) represent unadjusted deviations from the grand mean in terms of three attractiveness groupings, while the thick lines (—○—) represent the adjusted effects. Finally, the dotted lines (— —) represent the adjusted group mean deviations from the grand mean (i.e., males vs. females; unionized vs. non-unionized workers, etc.).

Figure 0 (sample) Adjusted and unadjusted effects of physical attractiveness ratings and XYZ on log(hourly wages): cross-sectional estimates



H₀ Rejection Criteria

As indicated elsewhere, our main objective was to assess whether a pattern of association between physical attractiveness and wage profiles as predicted by status generalization theory was a plausible one. In order to provide unambiguous and consistent way to reject the Null hypotheses throughout our analyses the following rejection criteria were established (see Table 6.5):

- statistical significance: p value ≤ 0.10 for the direct effects of attractiveness or p value ≤ 0.10 for the F-ratio to test the increment in the R^2 for the interactive effects. We elected to use the p value of ≤ 0.10 in order to further increase the possibility of falsely rejecting the null hypothesis and thus favouring the hypothesized relationships between physical attractiveness and economic success;

- slopes/direction: $\beta_i > 0$ for the direct effects of attractiveness, or $\beta_i - \beta_j$ (Δ) or $\beta_i < \beta_j < \beta_k$ for the interactive effects, as hypothesized;

Together, these two sets of criteria were used to determine whether the hypothesized associations between physical attractiveness and wages and wage growth were supported in our data. The following, 5-point classification (✓), was used:

- 1 rejection of the H_0 :** the Null hypothesis was rejected whenever five or six of the estimated models (separately for unadjusted and adjusted models) met these conditions (i.e., any combination of 2 or 3 statistical tests with p values of ≤ 0.10 and 2 or 3 slopes/directions consistent with the hypothesized directions totaling five or six);
- 2 marginal rejection of the H_0 :** the Null hypothesis was marginally rejected whenever four of the estimated models (separately for unadjusted and adjusted models) met these conditions (i.e., any combination of statistical test with p values of ≤ 0.10 and slopes/directions consistent with the hypothesized directions totaling four);
- 3 status of the H_0 undetermined:** the status of the Null hypothesis was deemed to be undetermined whenever three of the estimated models (separately for unadjusted and adjusted models) met these conditions (i.e., any combination of statistical test with p values of ≤ 0.10 and slopes/directions consistent with the hypothesized directions totaling three);
- 4 the H_0 cannot be rejected:** the Null hypothesis cannot be rejected whenever two of these estimated models (separately for unadjusted and adjusted models) met these conditions (i.e., any combination of

Table 6.5 Five-point H_0 rejection scheme: unstandardized regression coefficients (β slopes within groups) and statistical significance tests for the increment in the R^2 associated with the interactive terms ($:\beta_k X_i X_j$)					
Hypothesis no. x	Data set no. 1	Data set no. 2	Data set no. 3	Summary	Reject H_0
Hypothesized (simple effects) $H_0: \beta = 0$ $H_a: \beta > 0$					
Direction (β)	+ or - (✓ or ✗)	+ or - (✓ or ✗)	+ or - (✓ or ✗)	? of 3	YES (5-6 ✓) YES? (4 ✓) ? (3 ✓)
Significance (p)	$\leq .10$ or $> .10$ (✓ or ✗)	$\leq .10$ or $> .10$ (✓ or ✗)	$\leq .10$ or $> .10$ (✓ or ✗)	? of 3	NO? (2 ✓) NO (0-1 ✓)
Hypothesized (interaction effects) $H_0: \beta_i = \beta_j$ $H_a: \beta_i > \beta_j$	$\beta_i = + \text{ or } -$ $\beta_j = + \text{ or } -$	$\beta_i = + \text{ or } -$ $\beta_j = + \text{ or } -$	$\beta_i = + \text{ or } -$ $\beta_j = + \text{ or } -$		
Direction (Δ) ¹	+ or - $\beta_i > \beta_j$ (✓ or ✗)	+ or - $\beta_i > \beta_j$ (✓ or ✗)	+ or - $\beta_i > \beta_j$ (✓ or ✗)	? of 3	YES (5-6 ✓) YES? (4 ✓) ? (3 ✓)
Significance (p) ²	$\leq .10$ or $> .10$ (✓ or ✗)	$\leq .10$ or $> .10$ (✓ or ✗)	$\leq .10$ or $> .10$ (✓ or ✗)	? of 3	NO? (2 ✓) NO (0-1 ✓)
¹ Unstandardized regression coefficients (slopes): $\Delta (\beta_1 - \beta_2)$ or $\beta_i > \beta_j > \beta_k$ ² F-ratio to test the increment in the R^2 (Interactive term: $\beta_3 X_1 X_2$)					

statistical test with p values of ≤ 0.10 and slopes/directions consistent with the hypothesized directions totaling two);

- 5 the H_0 definitely cannot be rejected:** the Null hypothesis definitely cannot be rejected whenever zero or one of these estimated models (separately for unadjusted and adjusted models) met these

conditions (i.e., any combination of statistical test with p values of ≤ 0.10 and slopes/directions consistent with the hypothesized directions totaling zero or one).

At the same time, it is important to point out that use of data sets with predetermined and relatively small sample sizes ($n = 700 - 900$) increases the probability of committing a Type II error especially when the hypothesized effects are likely to be small or moderate.

Cross-sectional Results: Hypothesis no. 1

The effect of attractiveness on wage profiles, all else being equal, should be positive.

The reduced-form earnings equation estimated below included key human capital variables (schooling, work experience, work experience in quadratic form, and job tenure), gender (male) and coverage by collective bargaining (union membership). In addition to variables mentioned above, the reduced-form equation included ratings of physical attractiveness coded in two different ways. The goal of these models was to assess the marginal effect of physical attractiveness on earnings once the key human capital variables were accounted for. Columns (i), (ii) and (iii) of Table 6.6 present estimates of earnings equations based on the 1977, 1979, and 1981 cross-sectional data with physical attractiveness entered as a set of dummy variables measuring above average (i.e., 'striking' and 'good looking') or below average (i.e., 'quite plain' and 'homely') levels of attractiveness with 'average' looking workers serving as the reference group in each year. Columns (iv), (v), and (vi) of the same table (Table 6.6) present identical estimates but with physical attractiveness measured on the original 5-point Likert type scale (5 = 'striking').

The estimated coefficients of all key human capital variables had the predicted signs, all were statistically significant, and the magnitudes of their effects were comparable to those generally found in other studies of wage determination. The estimated coefficients for the effect of formal education on wages indicated that each year of formal education increased wages by approximately 6.0% (5.5% to 6.6%). The effects of labour force experience and

its quadratic form were also statistically significant and in the expected directions in all cross-sectional specifications. The diminishing returns to experience -- as indicated by the negative signs of the experience variable in quadratic form -- confirmed that experience-wage profiles were indeed concave. Each additional year of labour force experience was associated with approximately 2.0% increase in hourly wages. Based on the estimated coefficients of experience and experience², the *average* premium associated with labour force experience (calculated for a worker who had 19 years of experience in 1977) was around 25.5% [i.e., $19 \times .0210 + (19^2 \times -.0004) = .399 - .144 = .255$]. The effect of labour force experience on wages attained its peak level after approximately 26 years of service (i.e., 1977: $[-.0210 / 2 \times -.0004] = 26.3$) and then started to diminish suggesting a decline in productivity. It is also interesting to note that there was little difference in the experience coefficients regardless of whether the potential vs. actual labour force experience measure was utilized (i.e., 1977 vs. 1979 and 1981) thus further validating our construction of this variable in the 1977 data set.

The effect of job tenure (i.e., years with the same employer) on hourly wages was around 1.0% per each year of tenure. It was suggested by some (Jovanovic, 1979; Prescott and Visscher, 1980) that earnings rise with job tenure as firms learn about worker productivities in various jobs (instead of workers' acquiring skills through experience). This learning process results in the more senior workers being matched more accurately to jobs commensurate with their skills than those with shorter tenures. Better job matches allow the senior workers to exhibit higher productivity on average, and if the market rewards productivity, these differences are said to account for their higher average earnings.

Table 6.6 Determinants of hourly wage, cross-sectional samples
Dependent Variable: Log(hourly wage)

Variable	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
education	.0582 (.0000) ^a	.0661 (.0000)	.0552 (.0000)
experience	.0210 (.0000)	.0218 (.0000)	.0184 (.0001)
experience ²	-.0004 (.0000)	-.0004 (.0000)	-.0004 (.0001)
job tenure	.0102 (.0000)	.0115 (.0000)	.0108 (.0000)
union membership	.1231 (.0000)	.1782 (.0000)	.1869 (.0000)
male	.1980 (.0000)	.2395 (.0000)	.2307 (.0000)
above average looks	.1007 (.0029)	.0621 (.0885)	.0270 (.4454)
below average looks	-.0366 (.5724)	-.1160 (.0915)	-.0588 (.4119)
Intercept	.6457 (.0000)	.6285 (.0000)	1.0090 (.0000)
Adjusted R ²	.26	.32	.26
	(iv)	(v)	(vi)
education	.0585 (.0000)	.0658 (.0000)	.0552 (.0000)
experience	.0209 (.0000)	.0221 (.0000)	.0184 (.0001)
experience ²	-.0004 (.0000)	-.0004 (.0000)	-.0004 (.0001)
job tenure	.0101 (.0000)	.0114 (.0000)	.0108 (.0000)
union membership	.1216 (.0002)	.1789 (.0000)	.1869 (.0000)
male	.1970 (.0000)	.2412 (.0000)	.2291 (.0000)
looks	.0636 (.0097)	.0717 (.0080)	.0329 (.2219)
Intercept	.4677 (.0000)	.4054 (.0010)	.9061 (.0000)
Adjusted R ²	.26	.32	.26

^a Unstandardized regression coefficients, *P* values appear in parentheses

Workers whose wages were set by collective bargaining earned from 12% (1977) to 19% (1981) more than those who worked in a non-unionized environment and male workers received wage premia ranging from around 20% to 24% relative to female workers. Neither of these results are surprising and both are well established in the wage determination literature. After all, one

of their *raison d'être* is to improve working conditions and salaries of their members (Bibb and Form, 1977). Unions can increase wages by influencing the labour market demand and supply by increasing the demand for labour, restricting the supply of labour or bargaining for an above-equilibrium wage. As indicated elsewhere, human capital theory has been expanded in recent years to deal with the structure of female wages. Some of its proponents have argued, for example, that the sex division of labour within the home generates sex differences in patterns of investment in work-related human capital and that this in turn generates sex differences in wages and the sex segregation of occupations (Mincer and Polachek, 1974; Polachek, 1981).

The coefficients measuring physical attractiveness, while not all statistically significant, indicated a sufficient consistency of the pattern across three cross-sectional waves of our data to suggest that pay premia and penalties associated with physical attractiveness are plausible. All the coefficients had the expected signs and some were statistically significant at conventional levels. Workers with above average looks received pay premia ranging from 3% to 10% while those below average received pay penalties ranging from 4% to 12%. These findings were corroborated by estimates [in columns (iv), (v), and (vi)] that measured physical attractiveness as a quasi-interval measure. More specifically, the effect of attractiveness on hourly wages ranged from 3% to 7% for a one-unit change in the attractiveness ratings on a 5-point Likert type scale. These estimates indicated that even after adjusting for key human capital differences, physical attractiveness ratings continued to be associated with workers' wages and in accordance with our predictions.

The next two tables (Tables 6.7 and 6.8) present the results of similar specifications as those presented above but utilizing a much richer set of controls. The results shown in table 6.7 used physical attractiveness coded as a set of dummies and those in table 6.8 as a quasi-interval measure. Both sets of results were based on cross-sectional samples. The additional controls included binary variables for employment in the public sector, frequency of on-the-job supervision, marital status, firm size, foreign born status, and two sets of dummies representing occupation and region/province of residence. The inclusion of additional controls in these models served two distinct purposes: to assess their impact on the estimates based on reduced models and to set the stage for the subsequent inclusion of several interactive terms designed to test whether the effects of physical attractiveness on wages profiles might be conditioned by other factors as hypothesized earlier.

The inclusion of these additional controls generally had the expected effect on the prior estimates and their level of significance. Overall, the amount of variance explained increased significantly in all models and the coefficients for key human capital variables, while reduced somewhat, remained qualitatively unchanged. For example, the coefficients for the effect of education on earnings decreased somewhat when occupational dummies were included in the equations. This was to be expected due to the indirect effect that education exerts on earnings via occupation. Of the added controls, only a handful produced significant and consistent coefficients across all three cross-sectional samples. There was, for example, some evidence that married individuals tended to have wages 6% to 11% higher than those who were single, divorced or separated. These finding were consistent with previous research analyzing the positive association between martial status and men's

Table 6.7 Determinants of hourly wage, cross-sectional samples
Dependent Variable: Log(hourly wage)

Variable	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
education	.0282 (.0000) ^a	.0319 (.0000)	.0280 (.0000)
experience	.0155 (.0002)	.0151 (.0009)	.0142 (.0018)
experience ²	-.0003 (.0001)	-.0003 (.0018)	-.0003 (.0009)
tenure	.0082 (.0002)	.0082 (.0002)	.0065 (.0026)
union	.1243 (.0001)	.1277(.0013)	.0825 (.0422)
public sector ^b	—	.1003 (.0353)	.0867 (.0380)
supervision	-.0627 (.0845)	.0490 (.2399)	.0042 (.9228)
male	.1639 (.0000)	.1991 (.0000)	.2184 (.0000)
married	.0609 (.1015)	.1081 (.0049)	.0664 (.0842)
foreign born	-.1210 (.0023)	-.0274 (.4947)	.0006 (.9883)
professionals	.4253 (.0000)	.5825 (.0000)	.4086 (.0000)
technicians	.3503 (.0000)	.4088 (.0000)	.1772 (.0101)
managers	.5164 (.0000)	.6528 (.0000)	.4393 (.0000)
supervisors	.2156 (.0032)	.2762 (.0001)	.1132 (.1016)
skilled services	.1926 (.0062)	.3069 (.0000)	.1700 (.0110)
craftsmen	.2196 (.0001)	.2249 (.0003)	.1594 (.0077)
semi-skilled services	.0623 (.2860)	.0363 (.5572)	-.0540 (.3572)
firm size (50+) ^b	—	.1217(.0022)	.2016 (.0000)
Atlantic ^c	-.0902 (.1007)	-.1402 (.0162)	—
Quebec ^c	-.0684 (.0662)	.0076 (.8430)	—
Prairies ^c	-.0239 (.6284)	-.0179 (.7273)	—
B.C. ^c	.1261 (.0308)	.1155 (.0386)	—
above average	.0918 (.0042)	.0440 (.1902)	.0307 (.3547)
below average	-.0033 (.9575)	-.1234 (.0521)	-.0228 (.7350)
Intercept	.8085 (.0000)	.7594 (.0000)	1.1178 (.0000)
Adjusted R ²	.36	.43	.35

^a Unstandardized regression coefficients, *P* values appear in parentheses
^b Not available in 1977
^c Not available in 1981

wages. This effect was usually accounted for in terms of a marriage market effect (i.e., a greater propensity of better paid men to get married) or the employers preference to grant married men wage premia. It is interesting to note that the cross-sectional association between men's wages and marital status disappears when longitudinal analysis is used thus suggesting that omitted variables affecting both marriage status and wages might be responsible for the higher wages of married men (Cohen and Haberfeld, 1991). Whether a similar process might be at work as far as the effects of attractiveness on wage profiles are concerned remains to be seen.

Firm size (50 employees or more) was also associated with wage premia ranging from 12% to 20%. Once again, these findings were consistent with the existing literature on wage determination which suggests that larger firms or those with major market shares tend to pay higher wages and salaries than smaller firms. The effect of firm size on wages is usually explained in terms of the following factors: large firms are more likely to be unionized; workers in large firms may be more productive due to greater amounts and better quality of human capital; the workers in large firms were "superior" employees who required less supervision; firms possessing large market shares often make significant economic profits which increases worker bargaining power and leads to higher wage rates; large firms may be less pleasant to work, requiring compensating differentials above wages for smaller firms. A similar trend of wage premia, and presumably for somewhat similar reasons, was also found as far as employment in the public sector was concerned (i.e., 9% to 10% premia).

Table 6.8 Determinants of hourly wage, cross-sectional samples
Dependent Variable: Log(hourly wage)

Variable	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
education	.0287 (.0000) ^a	.0319 (.0000)	.0279 (.0000)
experience	.0154 (.0003)	.0153 (.0007)	.0145 (.0015)
experience ²	-.0003 (.0001)	-.0003 (.0017)	-.0003 (.0008)
tenure	.0082 (.0002)	.0081 (.0002)	.0065 (.0026)
union	.1222 (.0002)	.1287 (.0012)	.0833 (.0408)
public sector ^b	—	.1012 (.0337)	.0901 (.0320)
supervision	-.0616 (.0911)	.0491 (.2396)	.0044 (.9204)
male	.1628 (.0000)	.1969 (.0000)	.2201 (.0000)
married	.0575 (.1222)	.1088 (.0046)	.0653 (.0909)
foreign born	-.1234 (.0019)	-.0287 (.4743)	-.0008 (.9833)
professionals	.4223 (.0000)	.5763 (.0000)	.4076 (.0000)
technicians	.3487 (.0000)	.4081 (.0000)	.1715 (.0131)
managers	.5175 (.0000)	.6473 (.0000)	.4396 (.0000)
supervisors	.2116 (.0039)	.2740 (.0001)	.1148 (.0970)
skilled services	.1901 (.0070)	.3037 (.0000)	.1726 (.0102)
craftsmen	.2196 (.0001)	.2230 (.0003)	.1626 (.0067)
semi-skilled services	.0657 (.2614)	.0351 (.5698)	-.0526 (.3692)
firm size (50+) ^b	—	.1220 (.0021)	.2040 (.0000)
Atlantic ^c	-.0966 (.0793)	-.1429 (.0142)	—
Quebec ^c	-.0696 (.0625)	.0073 (.8491)	—
Prairies ^c	-.0265 (.5928)	-.0188 (.7135)	—
B.C. ^c	.1201 (.0398)	.1151 (.0394)	—
looks	.0478 (.0422)	.0553 (.0272)	.0289 (.2537)
Intercept	.6790 (.0000)	.5826 (.0000)	1.0256 (.0000)
Adjusted R ²	.35	.43	.35

^a Unstandardized regression coefficients, *P* values appear in parentheses

^b Not available in 1977

^c Not available in 1981

A set of dummies representing different occupational groupings produced a large number of significant and generally consistent coefficients in all three subsamples. Their statistical significance was largely due, however, to the use of 'unskilled workers' as a reference category. Nevertheless, the inclusion of occupational dummies, adjusted our estimates for occupational differences. There was also some evidence for provincial/regional disparities in terms of wage structure. These estimates confirmed what we knew all along, namely, that the workers residing in the Atlantic provinces of Canada received wage penalties and those residing in British Columbia wage premia, relative to those individuals who lived and worked in Ontario. Overall, these findings supported the importance of the socio-economic context in which individuals work as a relevant factor responsible for wage differentials. There was also some indication that foreign-born workers might be penalized by as much as 12% (i.e., 1977 estimates) relative to their Canadian-born colleagues (cf. Darroch, 1979).

MANCOVA approach

The results presented in Table 6.9 and Figure 1 as well as the overall summary displayed in Table 6.10 were based on the MANCOVA and modified regression approach to test hypothesis no. 1. The unadjusted deviations from the grand mean (see Table 6.9) indicated that the above average rated workers received pay premia ranging from +3.4% to +8.1%, average rated workers received pay penalties ranging from -1.1% to -3.4% while those rated as below average received pay penalties ranging from -10.0% to -16.6% relative to the unadjusted grand mean. After adjusting for relevant controls (see footnote in Table 6.9 and Table 6.10 for further details), these pay premia and penalties based on looks, while smaller, remained qualitatively unchanged. Workers

with above average looks received pay premia ranging from +2.2% to +6.1% while those below average received pay penalties ranging from -2.7% to -13.0% relative to the overall (grand) mean. The average rated workers received pay penalties ranging from -0.7% to -3.4%.

Table 6.9 Adjusted and unadjusted effects of physical attractiveness ratings on log(hourly wages)^a: cross-sectional samples

Attractiveness rating	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average	-2.7% (-16.6%) ^b	-13.0% (-14.7%)	-3.2% (-10.0%)
Average	-3.3% (-3.4%)	-0.7% (-1.7%)	-0.9% (-1.1%)
Above average	+6.1% (+8.1%)	+3.7% (+6.5%)	+2.2% (+3.4%)
<i>P value</i>	0.013 (0.001)	0.036 (0.025)	0.569 (0.234)

^a Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, gender, marital status, foreign born, firm size (79 and 81), and dummy variables measuring occupation and region/province of residence (77 and 79)

^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses

The second set of results was based on the unstandardized regression coefficients (β - slopes) for the effect of physical attractiveness ratings measured on a 3-point Likert type scale (Table 6.10). These estimates provided a more direct and interpretable test of the hypothesized (linear) relationship between physical attractiveness and wages, especially once interactive effects were involved. This was because the estimated slopes contain three distinct pieces of information directly pertinent to each hypothesis: direction, magnitude and statistical significance level. The effect of attractiveness on hourly wages ranged

Figure 1 Adjusted and unadjusted effects of physical attractiveness ratings on log(hourly wages): cross-sectional estimates

Figure 1 (i)

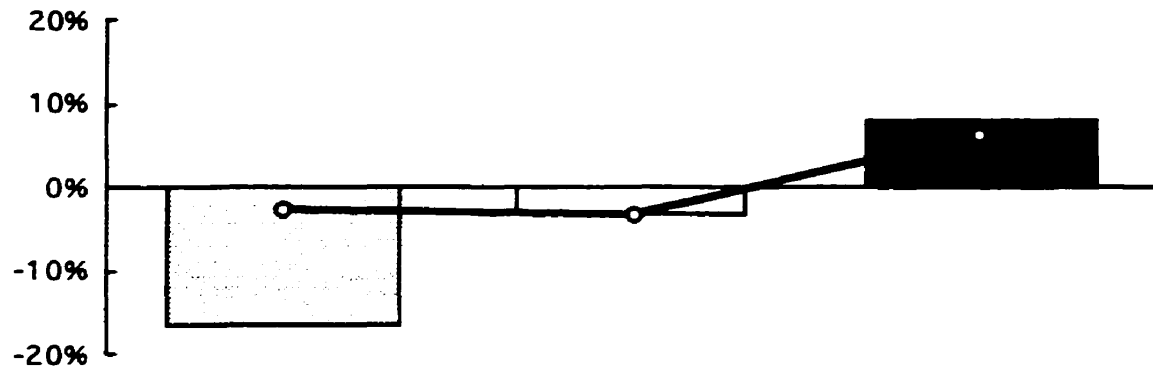


Figure 1 (ii)

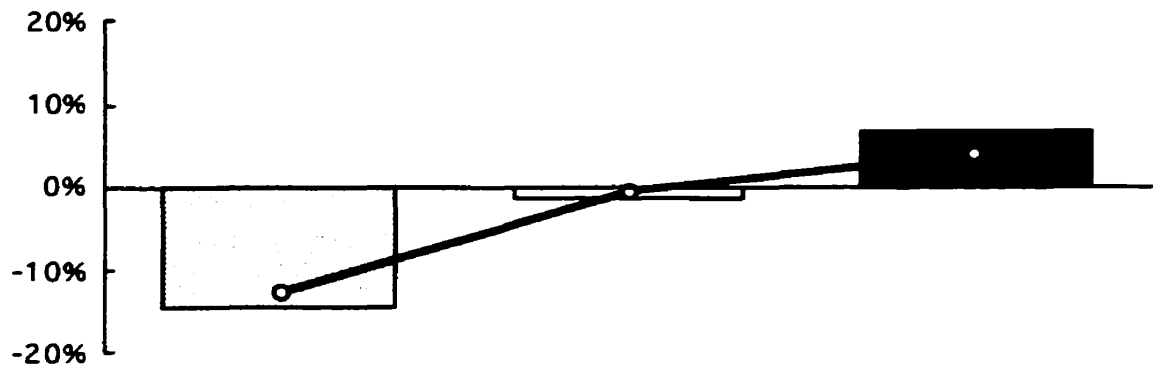
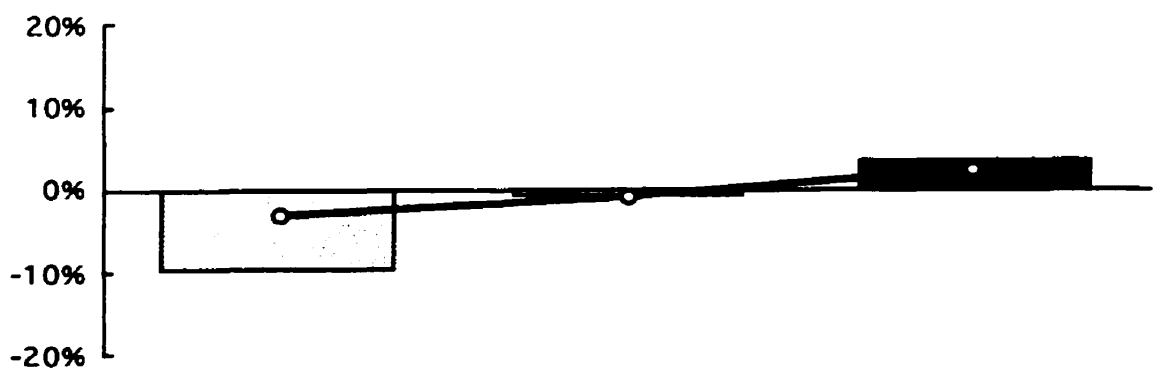


Figure 1 (iii)



Below average
 Average
 Above average
 Adjusted effects

0% = GRAND MEAN

from +5.5% to +11.9% for a one-unit change in the attractiveness ratings before adjusting for controls (β_{looks}). The inclusion of control variables had little impact on the physical attractiveness estimates in cross-sectional samples. The adjusted effects were smaller and ranged from +2.9% to +8.8% for a one-unit change in the attractiveness ratings.

Table 6.10 Summary: hypothesis no. 1					
Unadjusted and adjusted unstandardized regression coefficients and significance tests for the effects of attractiveness (looks) on log(hourly wages)					
Cross-sectional samples					
	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H ₀
Unadjusted effects					
H ₀ : β _{looks} = 0					
H _a : β _{looks} > 0					(6 of 6)
Direction (β)	+0.119 ✓	+0.094 ✓	+0.055 ✓	3 of 3	YES
Significance (p)	.000 ✓	.007 ✓	.100 ✓	3 of 3	
Adjusted effects ^a					
H ₀ : β _{looks} = 0					
H _a : β _{looks} > 0					(5 of 6)
Direction (β)	+0.088 ✓	+0.064 ✓	+0.029 ✓	3 of 3	YES
Significance (p)	.004 ✓	.018 ✓	.290 ✗	2 of 3	
^a Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, gender, marital status, foreign born, firm size (79 and 81), and dummy variables measuring occupation and region/province of residence (77 and 79)					

All the effects (both unadjusted and adjusted) had the expected signs and the overall effects of physical attractiveness on wages were statistically significant at $p \leq .10$ in all three unadjusted models and for adjusted results in

two of the three waves of our data. These results provided strong support for our main hypothesis that the labour market rewards attractiveness. These findings were consistent, both in terms of direction and magnitude, with previous research analyzing the positive association between physical attractiveness and wages (Roszell, Kennedy, Grabb, 1989; Hamermesh and Biddle, 1994).

Summary

In all three cross-sectional samples the effects of looks on wages were consistent with our predictions suggesting that pay premia and penalties associated with physical attractiveness are plausible. Overall, these results provided strong support for hypothesis no. 1 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 2

The effect of attractiveness on wage profiles, all else being equal, should be higher for male than for female workers.

Status generalization theory suggested that the effect of attractiveness on wages or wage growth should be stronger whenever attractiveness is combined with other diffuse status characteristics such as gender or race. Table 6.11 presents the unadjusted and adjusted deviations from the grand mean as well as the statistical significance tests describing the relationship between physical attractiveness ratings and gender on wages in cross-sectional models utilizing the MANCOVA approach. Overall, male workers earned significantly higher earnings than female workers in all six specifications (3 unadjusted and 3 adjusted models; $p < .000$) and the effects of looks on wages were significant in

four of the six specifications. Male workers received wage premia ranging from +7.3% to +11.6% while female workers received wage penalties ranging from -11.7% to -13.9% relative to the adjusted grand mean. However, none of the interactive terms reached conventional levels of significance thus suggesting that the effects of attractiveness on wages were similar for the two genders. Namely, more attractive workers of both sexes tended to have higher earnings than those who were rated as less attractive (Figure 2). This pattern was fairly similar and equally applicable both to the unadjusted and adjusted deviations from the grand mean.

Table 6.11 Adjusted and unadjusted effects of physical attractiveness ratings and gender on log(hourly wages)^a: cross-sectional samples

Attractiveness and gender	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average			
Male	+6.0% (-5.8%) ^b	+5.9% (+11.3%)	+8.8% (-2.6%)
Female	-16.7% (-31.4%)	-33.4% (-40.2%)	-17.9% (-24.3%)
Average			
Male	+3.2% (+6.4%)	+7.0% (+12.5%)	+9.3% (+13.9%)
Female	-14.0% (-20.6%)	-9.7% (-20.5%)	-12.3% (-16.4%)
Above average			
Male	+12.5% (+18.7%)	+13.0% (+21.1%)	+12.7% (+18.1%)
Female	-4.7% (-6.7%)	-7.3% (-9.8%)	-9.5% (-13.8%)
<i>P values</i>			
Looks	0.016 (0.000)	0.040 (0.014)	0.546 (0.182)
Gender	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Looks X Gender	0.905 (0.978)	0.204 (0.450)	0.934 (0.841)

^a Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, foreign born, firm size (79 and 81), and dummy variables measuring occupation and region/province of residence (77 and 79)

^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses

The second set of results was based on the unstandardized regression coefficients (β - slopes) for the effect of physical attractiveness ratings measured on a 3-point Likert type scale *within* each gender (Table 6.12). These estimates (gender-specific slopes and F-ratios to test the increment in the R^2 for the interaction between looks and gender) provided a more direct and interpretable test of the hypothesized relationship between physical attractiveness and gender on hourly wages. The effect of attractiveness on hourly wages for male workers ranged from +6.9% to +12.3% and from +4.3% to +13.1% for female workers for a one-unit change in the attractiveness ratings before adjusting for controls [$\beta_{(M)}$ and $\beta_{(F)}$, respectively]. The inclusion of control variables tended to reduce the impact of the physical attractiveness estimates in cross-sectional samples. As a result, the adjusted effects of looks on wages were smaller and ranged from +3.3% to +5.7% for males and +5.0% to +8.7% for females for a one-unit change in the attractiveness ratings.

None of the interactive terms estimated in the regression approach (F-ratios to test the increment in the R^2 for the looks x gender interactive term) reached conventional levels of significance thus suggesting that the relationship between physical attractiveness and wages was comparable for the two genders. While not statistically significant, 5 of the 6 estimated coefficients (2 unadjusted and 3 adjusted) were larger for female than for male workers, implying that pay premia associated with attractiveness might be slightly larger (around 2% larger for a one-unit change for females than for males in all three adjusted estimates).

Figure 2 Adjusted and unadjusted effects of physical attractiveness ratings and gender on log(hourly wages): cross-sectional estimates

Figure 2 (i)

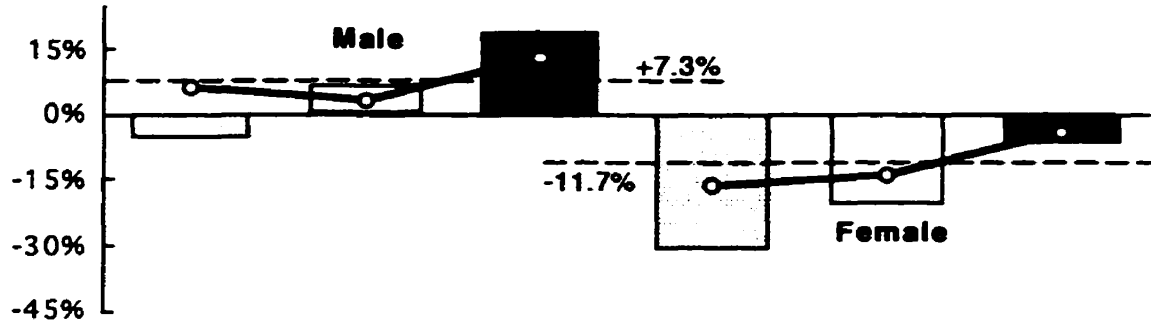


Figure 2 (ii)

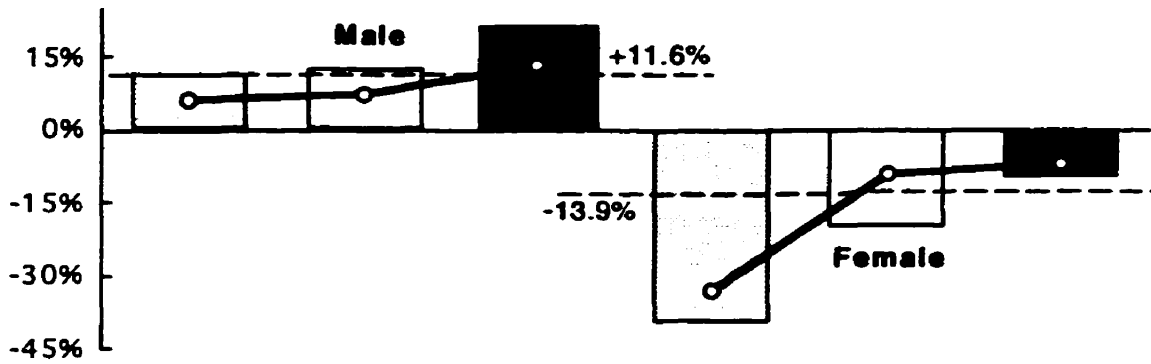
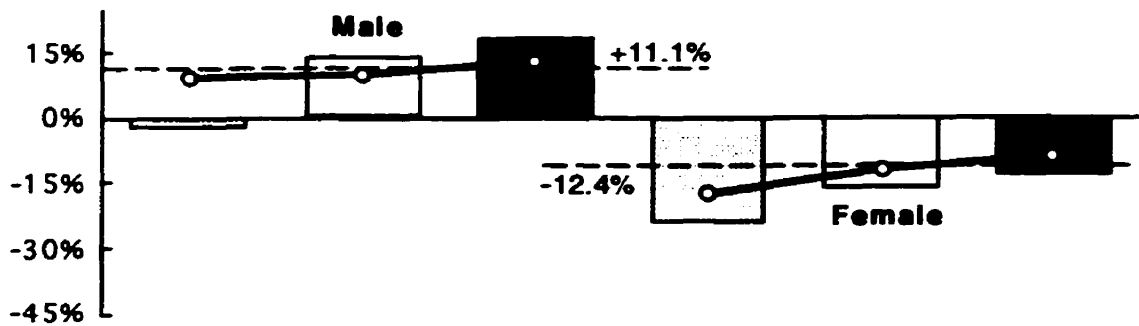


Figure 2 (iii)



☐ Below average
 ☐ Average
 ☒ Above average
 ☒ Adjusted
 - - Group means
 0% = GRAND MEAN

The two other studies that used the CQL data set to examine the relationship between physical attractiveness and economic success (Roszell, Kennedy, Grabb, 1989; Hamermesh and Biddle, 1994) also addressed the issue of possible gender differences as far as the effects of attractiveness were concerned. Both studies conducted analyses separately for males and females. Hamermesh and Biddle (1994) were also surprised by the absence of significant differences by gender. They noted that although the attractiveness effects were slightly larger for men than for women, they were equally applicable to both sexes. They also found that unattractive women were less likely than others to participate in the labour force and were more likely to be married to men with unexpectedly low human capital.

On the other hand, Roszell et al. suggested that "the advantages of attractiveness were not appreciable unless the individual in question was male" (1989:556). Furthermore, their analyses led them to conclude that attractiveness effects were primarily confined to male-dominated occupations. It is important to note, however, that Roszell et al. (1989) used only one of the six data sets similar to those underlying the current study. They used the respondent's total annual income (in thousands of dollars) and assessed the effect of physical attractiveness in 1979 on income in 1981 while controlling for income in 1981 (income growth). Furthermore, they used respondents who completed two rather than all three waves of the survey thus increasing their sample size to 1,062. Finally, they used a relatively modest set of controls and operationalized their key variables in a somewhat different manner. They interpreted their findings in terms of attractiveness as a more scarce resource among men than women and hence a more readily apparent and marketable one. However, their

own test for parallelism showed that the two slopes were not significantly different from each other.

The coefficients presented in Table 6.12 based on the 1981 data set -- that is the data on which both of the above mentioned studies were based - offers some clues as to why the results presented here might be somewhat different. It is worth noting that the unadjusted slopes for the effect of looks in 1981 were, indeed, larger for males than for females (+7.2% vs. +4.3%). The fact that the present study utilized a richer set of controls than either Roszell et al. (1989) or Hamermesh and Biddle (1994) as well as the above mentioned methodological differences are probably sufficient to account for some, if not all, of these disparities. The unadjusted effects suggested that the effects of looks were virtually identical in 1977, larger for females than for males in 1979, and larger for males than for females in 1981. However, these gender differences were never large enough to attain conventional levels of significance. This repeated lack of significance is, of course, fully consistent with 'changes' in direction of effect across panels such as that which here results in inconsistencies with results based on only one panel. Taken as a whole, these results provided no support for our hypothesis that the labour market rewards attractiveness in a significantly different way for the two sexes.

Table 6.12 Summary: hypothesis no. 2

Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and gender (M = 'Males'; F = 'Females') on log(hourly wages)

Cross-sectional samples

	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H ₀
<i>Unadjusted effects</i>					
H ₀ : β(M) = β(F)	β(M) = +.123	β(M) = +.069	β(M) = +.072		(1 of 6) NO
H _a : β(M) > β(F)	β(F) = +.131	β(F) = +.131	β(F) = +.043		
Direction (Δ) ¹	-.008 ✗	-.062 ✗	+.029 ✓	1 of 3	
Significance (p) ²	.893 ✗	.354 ✗	.556 ✗	0 of 3	
<i>Adjusted effects³</i>					
H ₀ : β(M) = β(F)	β(M) = +.057	β(M) = +.051	β(M) = +.033		(0 of 6) NO
H _a : β(M) > β(F)	β(F) = +.087	β(F) = +.077	β(F) = +.050		
Direction (Δ) ¹	-.030 ✗	-.026 ✗	-.017 ✗	0 of 3	
Significance (p) ²	.203 ✗	.545 ✗	.898 ✗	0 of 3	

¹ Δ (β_M - β_F)

² F-ratio to test the increment in the R² (β₃ X_{looks}X_{gender})

³ Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, foreign born, firm size (79 and 81), and dummy variables measuring occupation and region/province of residence (77 and 79)

Summary

The effect of looks on wages was not modified by worker's gender as predicted by status generalization theory. Overall, these results provided no support for hypothesis no. 2 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 3

The effect of attractiveness on wage profiles, all else being equal, should be higher for Canadian-born than for foreign-born workers.

The next set of estimates was designed to assess whether the effect of physical attractiveness on wages was stronger for the Canadian-born than for the foreign-born workers. Table 6.13 (Figure 3) presents the results of these specifications. The foreign-born workers earned less than their Canadian-born counterparts in 1977 and 1981 specifications but this trend was reversed in 1979 data. The effects of country of birth on wage profiles were small and/or non-significant in virtually all estimated models as illustrated by the fact that the overall differences in terms of wages between the Canadian-born and the foreign-born workers did not reach conventional levels of significance in any of the models specified. This was probably to be expected as the operationalization of this variable was far from ideal.

Originally, we anticipated that the number of individuals who could be classified as 'visible minorities' in the CQL survey would be sufficiently large to assess whether the effect of physical attractiveness on wage profiles might be conditioned by one's minority status. The country of birth captures an entirely different concept and it introduces considerable amount of 'noise' as many of the foreign-born respondents were likely to be highly skilled American and British born workers. As indicated by Boyd (1984), the double negative of being female and foreign born is less of a factor for the occupational attainments of women born in the US and in the UK, than it is for women born in Europe and elsewhere.

Table 6.13 Adjusted and unadjusted effects of physical attractiveness ratings and country of birth on log(hourly wages)^a: cross-sectional samples

Attractiveness and country of birth	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average			
Canadian born	-3.2% (-14.8%) ^b	-15.7% (-21.3%)	-1.6% (-10.4%)
Foreign born	-7.5% (-20.0%)	-1.1% (+12.4%)	-15.1% (-6.9%)
Average			
Canadian born	-0.4% (-1.7%)	-0.7% (-2.9%)	-0.3% (+0.5%)
Foreign born	-15.8% (-9.8%)	-0.6% (+2.3%)	-3.5% (-7.1%)
Above average			
Canadian born	+6.8% (+7.0%)	+5.9% (+6.6%)	+0.8% (+1.1%)
Foreign born	+3.5% (+13.6%)	-4.4% (+5.4%)	+8.4% (+13.7%)
P values			
Looks	0.006 (0.000)	0.552 (0.411)	0.211 (0.087)
Country of birth	0.135 (0.709)	0.801 (0.097)	0.659 (0.737)
Looks X Country of birth	0.288 (0.333)	0.228 (0.276)	0.333 (0.144)
^a Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, gender, firm size (79 and 81), and dummy variables measuring occupation and region/province of residence (77 and 79)			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

The overall pattern of results emerging from these analyses was not very consistent and, at times, contradictory. It is important to point out, however that some of the cells on which these estimates were based contained relatively few subjects, including one cell with less than 10 cases [1981: 'below average' foreign-born workers (n=6)]. Figure 3 shows a graphic depiction of the effects of physical attractiveness on wages moderated by whether the respondents were Canadian- or foreign-born. Our original hypothesis was based on the combined effect of two diffuse status characteristics according to the aggregating principle

of status generalization theory. Studies have shown that black female wage earners face greater wage discrimination than either white female or black male wage earners. Cotton (1988) demonstrated, for example, that when skills were fairly comparable, black females earned an average wage nearly 21% lower than white males, whereas white females earned only 15.5% lower in the US. The results of the two studies cited above (Boyd, 1984; Cotton, 1988) further underscore the relevance of the double negative (positive) concept to physical attractiveness research.

The second set of results was based on the unstandardized regression coefficients (β - slopes) for the effect of physical attractiveness ratings measured on a 3-point Likert type scale and estimated separately for the Canadian- and the foreign-born workers [$\beta_{(C)}$ and $\beta_{(F)}$, respectively]. The effect of attractiveness on hourly wages for the Canadian-born workers ranged from +1.1% to +8.3% (unadjusted effects: from +3.1% to +11.8%) and from -13.1% to +12.5% (unadjusted effects: from 0.0% to 18.8%) for the foreign-born workers for a one-unit change in the attractiveness ratings. While two of the adjusted effects (Table 6.14) produced the expected signs including one significant interaction ($p=0.084$), there was little evidence to suggest that this hypothesis was supported in our data. This was in part because country of birth appears not to meet the criteria of a diffuse status characteristic in the Canadian labour market and in part because different waves of the CQL data produced widely different results. We concluded, therefore, that the attractiveness effects were equally applicable to both the Canadian- and the foreign-born workers and that the most departures from this trend were statistical artifacts due to small number of cases in some cells rather than an indication of the true underlying

Figure 3 Adjusted and unadjusted effects of physical attractiveness ratings and country of birth on log(hourly wages): cross-sectional estimates

Figure 3 (i)

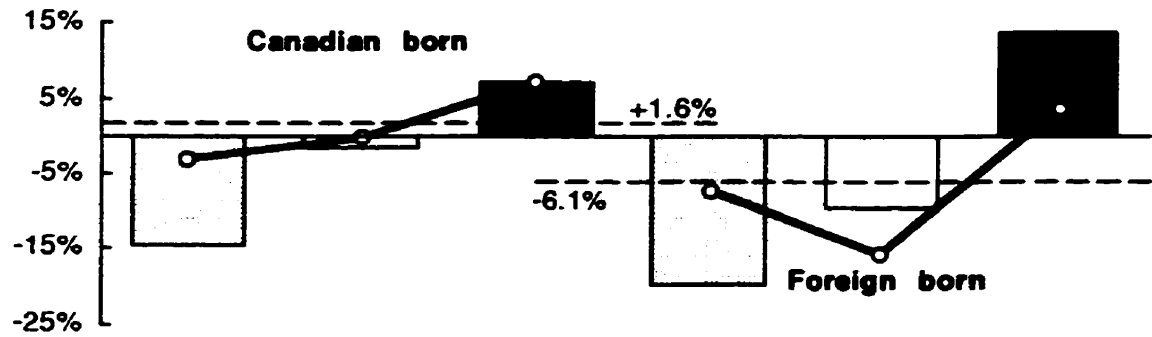


Figure 3 (ii)

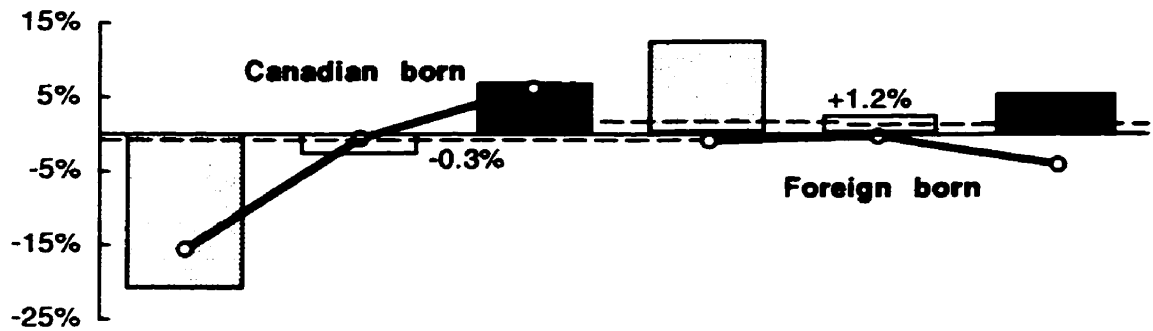
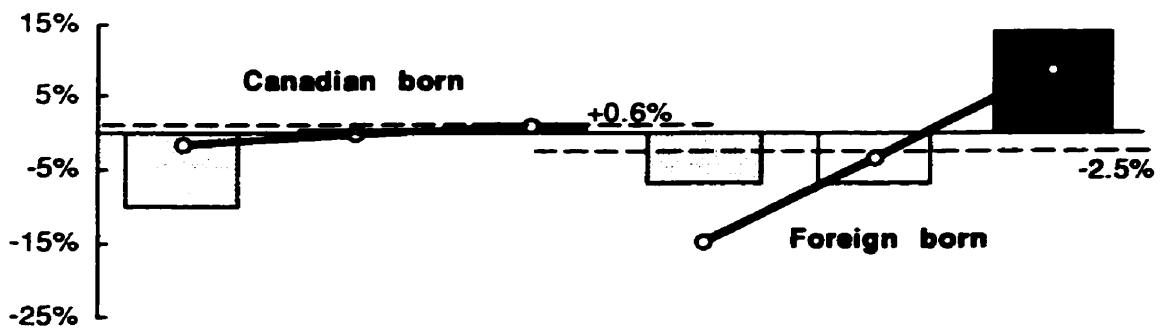


Figure 3 (iii)



□ Below average □ Average ■ Above average ○ Adjusted --- Group means
 0% = GRAND MEAN

differences. The issue of ethnicity (visible minority or foreign-born status) and how it might relate to attractiveness was not formally addressed in the studies conducted by Roszell et al. (1989) or Hamermesh and Biddle (1994).

Table 6.14 Summary: hypothesis no. 3 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and country of birth (C = 'Canadian born', F = 'Foreign born') on log(hourly wages): Cross-sectional samples					
	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H ₀
Unadjusted effects H ₀ : $\beta(C) = \beta(F)$ H _a : $\beta(C) > \beta(F)$ Direction (Δ) ¹ Significance (p) ²	$\beta(C) = +.097$ $\beta(F) = +.188$ -.091 ✗ .220 ✗	$\beta(C) = +.118$ $\beta(F) = .000$ +.118 ✓ .173 ✗	$\beta(C) = +.031$ $\beta(F) = +.170$ -.139 ✗ .117 ✗	1 of 3 0 of 3	(1 of 6) NO
Adjusted effects³ H ₀ : $\beta(C) = \beta(F)$ H _a : $\beta(C) > \beta(F)$ Direction (Δ) ¹ Significance (p) ²	$\beta(C) = +.064$ $\beta(F) = +.048$ +.016 ✓ .570 ✗	$\beta(C) = +.083$ $\beta(F) = -.131$ +.214 ✓ .084 ✓	$\beta(C) = +.011$ $\beta(F) = +.125$ -.114 ✗ .137 ✗	2 of 3 1 of 3	(3 of 6) ?
¹ $\Delta (\beta_C - \beta_F)$ ² F-ratio to test the increment in the R ² ($\beta_3 \times \text{looks} \times \text{Country of birth}$) ³ Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, gender, firm size (79 and 81), and dummy variables measuring occupation and region/province of residence (77 and 79)					

Summary

The effect of looks on wages was not modified by the respondent's country of birth. Overall, these results provided no support for hypothesis no. 3 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 4

The effect of attractiveness on wage profiles, all else being equal, should yield higher returns as the amount of labour force experience increases.

The next set of interactive effects that was estimated involved the relationship between the respondent's level of attractiveness and earnings conditioned by labour force experience. Labour force experience (actual or potential) and its quadratic form were used as a labour market equivalent of another diffuse status characteristic (age). We hypothesized -- based on status generalization theory -- that the effect of physical attractiveness on wage profiles might be moderated by workers' labour force experience. More specifically, the aggregating assumption of status generalization theory suggests that attractiveness should yield higher returns to wages for workers who had accumulated longer labour force experience and who are attractive than those who are not.

In order to accommodate estimation of these interactive terms within the MANCOVA framework the labour force experience was recoded into a categorical variable (i.e., ' ≤ 10 years'; '11 - 25 years'; and ' ≥ 26 years'). These values were intended to corresponded to "low", "medium" and "high" values of work experience in the year-specific data while maintaining sufficient number of subjects in each category. While we aimed to retain at least 10-15 cases in each cell, this was not always possible. In the 1981 data set one of the cells (i.e., 'below average' workers with less than 10 years of labour force experience) included only 6 individuals. Table 6.15 (Figure 4) presents the results of cross-sectional specifications of these interaction terms.

Table 6.15 Adjusted and unadjusted effects of physical attractiveness ratings and labour force experience on log(hourly wages)^a: cross-sectional samples

Attractiveness and experience	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average			
≤ 10 years	-19.0% (-32.7%) ^b	-25.3% (-24.4%)	+14.0% (+7.4%)
11 - 25 years	+19.7% (+5.6%)	-10.1% (-4.8%)	+3.6% (+7.4%)
≥ 26 years	-5.6% (-21.2%)	-8.4% (-21.0%)	-5.3% (-28.0%)
Average			
≤ 10 years	-9.9% (-8.0%)	-11.7% (-13.7%)	-12.4% (-10.8%)
11 - 25 years	+0.4% (+1.7%)	+3.1% (+4.9%)	+5.1% (+4.5%)
≥ 26 years	-0.6% (-4.3%)	+4.0% (-0.5%)	+6.1% (-1.2%)
Above average			
≤ 10 years	-2.7% (+2.4%)	-5.6% (+1.7%)	-0.8% (-0.8%)
11 - 25 years	+12.4% (+18.0%)	+6.4% (+9.8%)	+7.6% (+10.3%)
≥ 26 years	+7.3% (+4.3%)	+7.9% (+6.5%)	+3.3% (-2.8%)
P values			
Looks	0.022 (0.001)	0.039 (0.017)	0.498 (0.488)
Experience	0.003 (0.009)	0.088 (0.142)	0.711 (0.019)
Looks X Experience	0.471 (0.646)	0.998 (0.834)	0.296 (0.286)
^a Adjusted for continuous and indicator variables measuring education, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, gender, foreign born, firm size (79 and 81), and dummy variables measuring occupation and region/province of residence (77 and 79)			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

The effect of labour force experience on wages was significant in most specifications but there were no statistically significant interactions involving physical attractiveness (Table 6.15). Relative to the grand mean, workers who accumulated less than 10 years of experience earned from -2.5% to -10.6% less, while those with between 11 to 25 years of experience earned from +2.7% to 10.7% more, after adjusting for covariates. The results for workers with more

than 26 years of labour force experience tended to be both smaller and less consistent across different specifications. There was also some indication that experience-wage profiles were indeed concave and that the effect of attractiveness on wages within each experience category tended to be both positive and linear.

Contrary to our prediction, there was no indication to suggest that the 'above average' workers had higher returns to work experience at the 'high' values of labour force experience than either 'average' or 'below average' looking workers. There were also some unexpected departures from linearity for the 'below average' workers at "low" levels of experience in 1977 and 1981 [Figure 4 (i) and Figure 4 (iii), respectively]. As indicated elsewhere, these departures were most likely due to small number of workers who met both criteria ($n=14$ and $n=6$, respectively). In general, the inclusion of control variables tended to reduce the impact of the physical attractiveness on wages.

The second set of results was based on the unstandardized regression coefficients (β - slopes) for the effect of physical attractiveness ratings measured on a 3-point Likert type scale (Table 6.16) *within* each level of labour force experience. The effect of attractiveness on hourly wages was positive and of similar magnitude within each level of experience both in the unadjusted and adjusted estimates suggesting that the effects of attractiveness were fairly homogenous across different levels of experience. Contrary to our expectations [i.e., $\beta_1(\leq 10) < \beta_2(11-25) < \beta_3(\geq 26)$], the effects of attractiveness while not statistically significant, were highest for those workers who had less than 10 years of labour force experience and they ranged from (β_1) +7.6% to +8.7%

Figure 4 Adjusted and unadjusted effects of physical attractiveness ratings and labour force experience on log(hourly wages): cross-sectional estimates

Figure 4 (i)

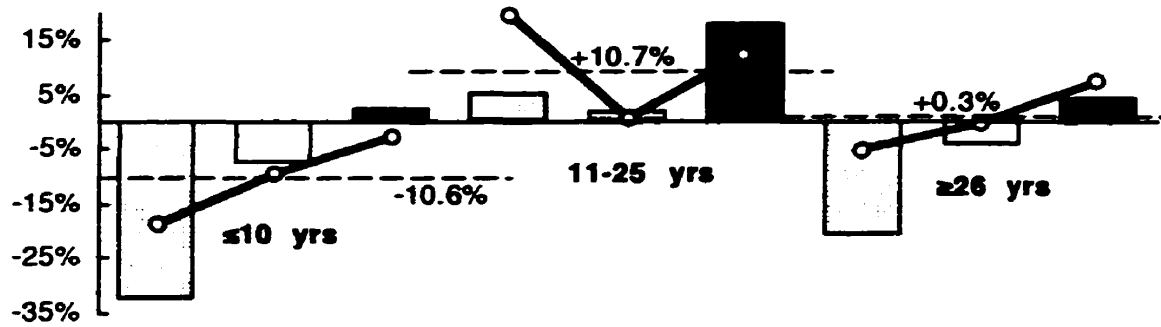


Figure 4 (ii)

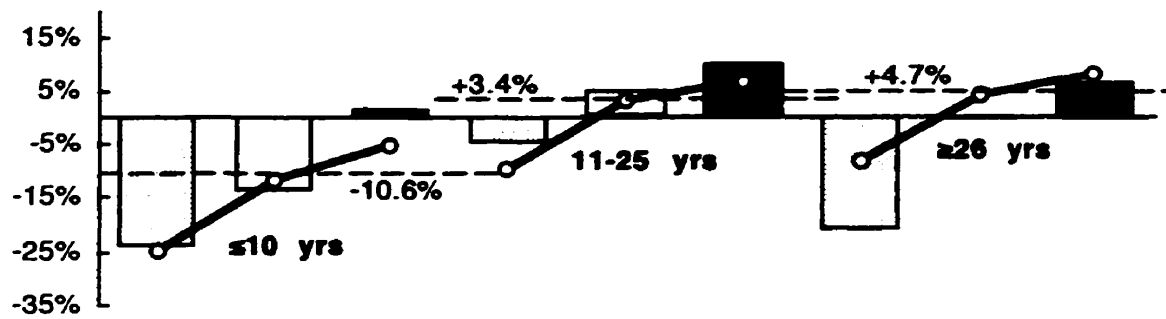
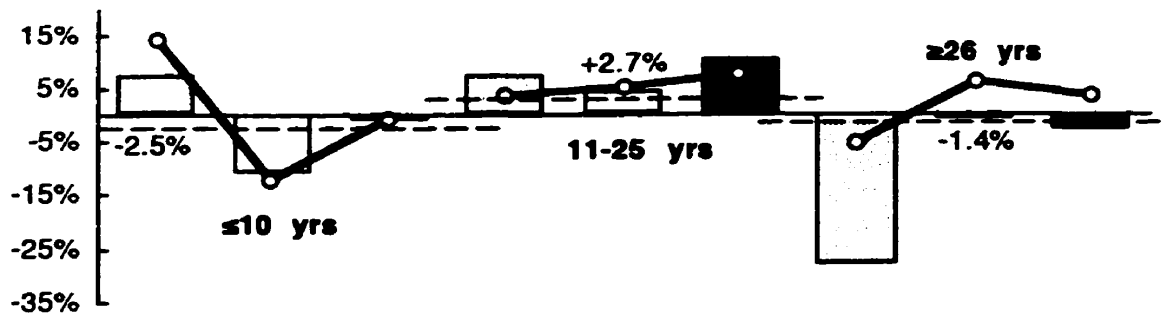


Figure 4 (iii)



□ Below average □ Average ■ Above average ○ Adjusted --- Group means
 0% = GRAND MEAN

(unadjusted from +6.2% to +13.1%) for a one-unit change in the attractiveness ratings after adjusting for controls.

These latest findings suggest that the effects of physical attractiveness might be especially potent during initial interactions. This might be due to the fact that other, frequently more pertinent information is lacking and thus the effects of diffuse status characteristics such as race, gender or attractiveness might be particularly strong. This explanation is also consistent with the informational model of discrimination of a more 'noisy' initial productivity signal.

However, the overall pattern of these results was fairly weak and it provided little support to the notion that the effects of physical attractiveness on wage profiles might be conditioned by labour force experience. The issue of the possible interaction between age or labour force experience and attractiveness was not addressed by Hamermesh and Biddle (1994) but it was in the study conducted by Roszell et al. (1989). They reported that among young respondents "there was no apparent connection between level of attractiveness and income attainment; however, among both middle-aged and older individuals, being attractive had a significant positive influence on economic success" (1989:554). This outcome was subsequently interpreted, like the effect of gender, in terms of relative scarcity and thus enhanced market value of attractiveness among older members of the labour force. The results presented above are not directly comparable with those reported by Roszell et al. (1989) as their study was not based on cross-sectional estimates. Furthermore, their estimates were based on within age rather than within labour force experience subgroups. They also suggested that caution was needed in drawing

conclusions from these apparent interaction effects as the possibility of chance findings for some age subgroups but not for others was high.

Table 6.16 Summary: hypothesis no. 4 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and labour force experience (1 = '≤10 yrs', 2 = '11-25 yrs', 3 = '≥ 25 yrs') on log(hourly wages): Cross-sectional samples					
	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H_0
Unadjusted effects $H_0: \beta_1 = \beta_2 = \beta_3$ $H_a: \beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta(1) = +.131$ $\beta(2) = +.118$ $\beta(3) = +.114$ $1 > 2 > 3 \quad \times$ $.862 \quad \times$	$\beta(1) = +.145$ $\beta(2) = +.062$ $\beta(3) = +.110$ $1 > 2 < 3 \quad \times$ $.918 \quad \times$	$\beta(1) = +.062$ $\beta(2) = +.038$ $\beta(3) = +.068$ $1 > 2 < 3 \quad \times$ $.688 \quad \times$	0 of 3 0 of 3	(0 of 6) NO
Adjusted effects³ $H_0: \beta_1 = \beta_2 = \beta_3$ $H_a: \beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta(1) = +.087$ $\beta(2) = +.073$ $\beta(3) = +.053$ $1 > 2 > 3 \quad \times$ $.911 \quad \times$	$\beta(1) = +.076$ $\beta(2) = +.049$ $\beta(3) = +.059$ $1 > 2 < 3 \quad \times$ $.997 \quad \times$	$\beta(1) = +.084$ $\beta(2) = +.015$ $\beta(3) = +.017$ $1 > 2 < 3 \quad \times$ $.631 \quad \times$	0 of 3 0 of 3	(0 of 6) NO
¹ $\beta_1 < \beta_2 < \beta_3$ ² F-ratio to test the increment in the $R^2(\beta_3 \times \text{looks} \times \text{experience})$ ³ Adjusted for continuous and indicator variables measuring education, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, gender, foreign born, firm size (79 and 81), and dummy variables measuring occupation and region/province of residence (77 and 79)					

Summary

The effect of looks on wages was not modified by worker's labour force experience. Overall, these results provided no support for hypothesis no. 4 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 5

The effect of attractiveness on wage profiles, all else being equal, should be higher when explicit information about competence or productivity is more difficult to directly observe. Conversely, in those settings where direct assessments of productivity are easier or less difficult to carry out, the effects of physical attractiveness should be lower.

As indicated earlier, we decided to operationalize the concept of difficulty in terms of direct assessments of productivity by whether the respondent worked in a firm with 50 or more employees or not. We predicted that the effects of attractiveness should be stronger for attractive workers employed in larger firms than in the smaller ones. Because information concerning the firm size was not available in the 1977 wave of the CQL survey, the cross-sectional estimates for that year as well as two of the panel specifications that utilized 1977 data were not specified. Table 6.17 and Figure 5 show the results of these cross-sectional estimates.

Overall, firm size was significantly associated with wage differentials in both waves of the data. Workers employed in larger firms earned from +6.4% to 7.1% more relative to the grand mean while those who worked for smaller companies (i.e., less than 50 employees) earned from -3.7% to -11.3% below the grand mean after adjusting for covariates. These findings were consistent with the existing literature on wage determination which suggests that larger firms or those with major market shares tend to pay higher wages and salaries than smaller firms. There was also some indication that these effects were mitigated by worker's level of attractiveness as one of the interactive terms

reached conventional levels of significance both in MANCOVA and in OLS specifications. While the 1979 estimates [Figure 5 (ii)] suggested that returns to attractiveness were similar in both settings, the 1981 estimates [Figure 5 (iii)] suggested that attractiveness might be more of an advantage in larger firms than in those employing fewer workers.

Table 6.17 Adjusted and unadjusted effects of physical attractiveness ratings and firm size on log(hourly wages)^a: cross-sectional samples

Attractiveness and firm size	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i) ^b	(ii)	(iii)
Below average			
< 50 employees	—	-15.8% (-18.3%) ^c	-8.4% (-23.6%)
> 50 employees	—	-7.6% (-8.4%)	-1.0% (-0.3%)
Average			
< 50 employees	—	-5.3% (-5.8%)	-10.9% (-22.2%)
> 50 employees	—	+8.2% (+5.3%)	+4.8% (+9.9%)
Above average			
< 50 employees	—	+0.1% (+6.3%)	-16.9% (-22.1%)
> 50 employees	—	+10.7% (+6.4%)	+13.1% (+19.3%)
<i>P values</i>			
Looks	—	0.048 (0.071)	0.903 (0.321)
Firm size	—	0.046 (0.262)	0.001 (0.000)
Looks X Firm size	—	0.873 (0.485)	0.071 (0.382)
^a Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, foreign born, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)			
^b Not available in 1977			
^c Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

The second set of results was based on the unstandardized regression coefficients (β - slopes) for the effect of physical attractiveness ratings measured

on a 3-point Likert type scale (Table 6.18) and estimated separately for those employed in smaller ($\beta_{<50}$) and larger ($\beta_{>50}$) firms before and after adjusting for controls. The effect of attractiveness on hourly wages was larger in firms employing less than 50 workers in the 1979 data set (12.2% versus 4.4%) but after adjusting for controls the coefficients for a one-unit change were virtually identical (+6.8% versus +6.7%). However, the adjusted effects of attractiveness on wages were significantly different in 1981 data. Those workers who were employed in larger firms received wage premia of 8.0% for a one-unit change in the attractiveness ratings while those employed in smaller firms received wage penalties of -6.9% for a one-unit change.

Overall, these analyses provided limited support to the hypothesized relationship between physical attractiveness, firm size and their conditional effect on wage profiles. The patterns were intriguing and while we have elected to interpret them in terms of status generalization theory they could be equally well accounted for in terms of alternative explanations such as imperfect labour market information. According to this framework, the process of obtaining additional information will yield diminishing returns implying that information becomes more costly as more of it is sought. At the same time, it is plausible to suggest that a firm size might be an independent correlate of imperfect information about its employees' productivity simply as a function of its size. These imperfections will limit the level to which wages may become uniform in terms of productivity extrinsic characteristics such as level of attractiveness.

Figure 5 Adjusted and unadjusted effects of physical attractiveness ratings and firm size on log(hourly wages): cross-sectional estimates

Figure 5 (ii)

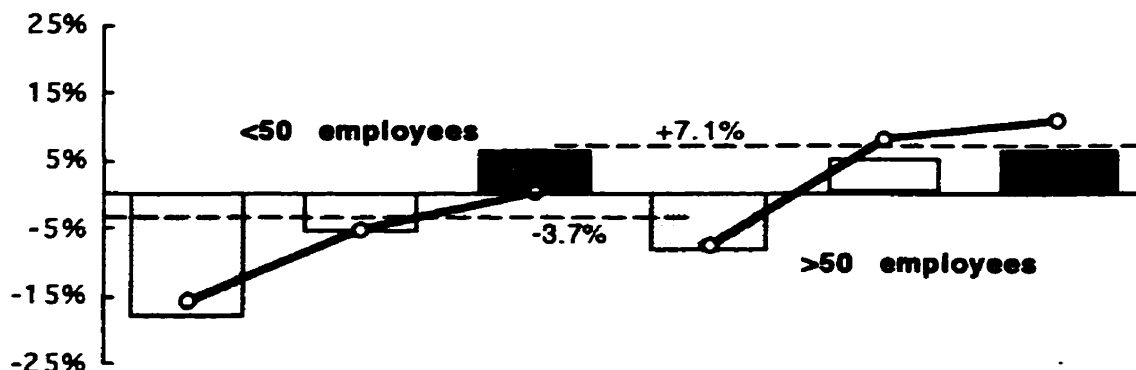
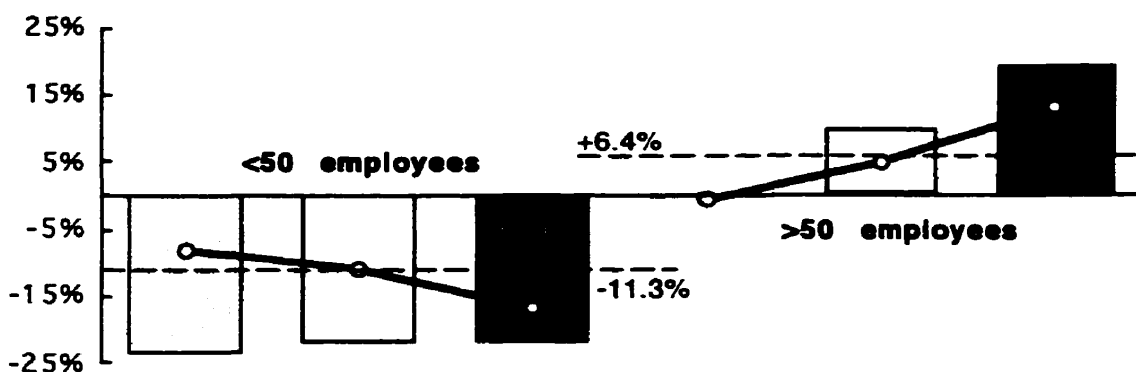


Figure 5 (iii)



□ Below average □ Average ■ Above average —○— Adjusted - - - Group means
 0% = GRAND MEAN

Because the two sets of data produced different results it is difficult to conclude whether our hypothesis was supported or not. Both sets of results suggested that attractiveness had a positive effect on wages for workers employed in larger firms and either similar or near-zero/negative effect for those employed in the smaller settings. Overall, these findings suggested that the

hypothesized relationship between absence/difficulty in obtaining explicit information about competence or productivity had some merit. However, the operationalization of this concept in terms of the firm size might be problematic. The issue of the possible interaction between firm size and attractiveness was not formally addressed neither by Hamermesh and Biddle (1994) nor by Roszell et al. (1989). However, the former, but not the latter, have adjusted their estimates for the effects of firm size.

Table 6.18 Summary: hypothesis no. 5					
Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and firm size (<50 employees and >50 employees) on log(hourly wages): Cross-sectional samples					
	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H ₀
<i>Unadjusted effects</i>					
H ₀ : β _{<50} = β _{>50}	—	β _{<50} =+.122	β _{<50} =+.004		(1 of 4) NO
H _a : β _{<50} < β _{>50}	—	β _{>50} =+.044	β _{>50} =+.095		
Direction (Δ) ¹	—	+.078 ✕	-.091 ✓	1 of 2	
Significance (p) ²	—	.291 ✕	.167 ✕	0 of 2	
<i>Adjusted effects³</i>					
H ₀ : β _{<50} = β _{>50}	—	β _{<50} =+.068	β _{<50} =-.069		(2 of 4) ?
H _a : β _{<50} < β _{>50}	—	β _{>50} =+.067	β _{>50} =+.080		
Direction (Δ) ¹	—	+.001 ✕	-.149 ✓	1 of 2	
Significance (p) ²	—	.896 ✕	.023 ✓	1 of 2	

¹ Δ (β_{<50} - β_{>50})

² F-ratio to test the increment in the R² (β₃ X_{looks}X_{Firm size})

³ Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, foreign born, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)

Summary

The effect of looks on wages might be modified by worker's firm size. Overall, these results provided limited support for hypothesis no. 5 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 6

The effect of attractiveness on wage profiles, all else being equal, should be small or irrelevant in occupational categories such as 'unskilled' and 'technical' but that it should be larger for occupational categories such as 'service' and 'professional'.

In order to assess whether physical attractiveness might be of particular relevance in some occupations (i.e., where 'attractiveness' might enhance productivity) we have further collapsed our eight occupational categories into four groupings. Table 6.19 shows how the original 16 group classification developed by Pineo et al. (1977) was reduced to 8, and subsequently, 4 categories. While this reduction in the number of occupational categories was designed to avoid sparsely occupied or empty cells, the number of cases for some of the occupation-looks combinations remained very small. Once again, this issue mainly applied as far as the 'below average' category was concerned. This is because in all three cross-sectional data sets the number of workers who were rated as 'below average' was small and it ranged from 52 to 53 individuals.

Table 6.19 Occupational categories		
Original Pineo et al. classification	Our classifications	
Self-employed professionals and employed professionals	Professionals	Professional
High and middle management	Managers	
Semi-professionals and technicians	Technicians	Technical
Skilled and semi-skilled crafts and trades	Craftsmen	
Supervisors and foremen	Supervisors	
Skilled clerical-sales-service	Skilled services	Service
Semi-skilled and unskilled clerical-sales-service	Semi-skilled services	
Unskilled labourers, framers and farm labourers	Unskilled	Unskilled

Tables 6.20, 6.21 and Figure 6 present cross-sectional results of the effects of physical attractiveness on wage profiles as moderated by workers' occupational category. These specifications were designed to assess whether physical attractiveness might be productivity enhancing in some occupations and thus responsible for differential earnings. It was also anticipated that there should be a greater prevalence of attractive individuals in those occupational categories where attractiveness is likely to be rewarded. The occupational distributions by physical attractiveness ratings across the three cross-sectional samples presented earlier (i.e., Tables 6.2, 6.3, and 6.4) show a fairly consistent pattern of over-representation of above average rated workers in the following occupational categories: 'professionals', 'skilled service workers', and 'semi-skilled service workers'. However, this pattern did not hold for 'managers' and there was some indication of a greater prevalence of attractive individuals in 'craftsmen' category.

Table 6.20 Adjusted and unadjusted effects of physical attractiveness ratings and occupation on log(hourly wages)^a: cross-sectional samples

Attractiveness and occupation	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average			
Unskilled	-31.2% (-36.2%) ^b	-21.8% (-33.2%)	-24.5% (-35.2%)
Technical	+7.3% (-1.5%)	-6.5% (-2.9%)	-1.9% (-5.5%)
Professional	+23.0% (+30.8%)	+22.3% (+26.9%)	+58.8% (+71.8%)
Service	-29.4% (-45.4%)	-40.1% (-53.7%)	-42.2% (-42.7%)
Average			
Unskilled	-34.0% (-36.3%)	-26.5% (-38.4%)	-22.1% (-29.3%)
Technical	-0.4% (+2.0%)	-1.3% (+2.7%)	+2.6% (+6.2%)
Professional	+20.0% (+31.8%)	+31.0% (+51.3%)	+25.5% (+41.1%)
Service	-13.4% (-23.6%)	-14.9% (-28.8%)	-15.8% (-27.5%)
Above average			
Unskilled	-3.5% (-8.1%)	-26.6% (-36.6%)	+2.9% (+9.2%)
Technical	+7.3% (+10.7%)	+8.7% (+11.0%)	-5.2% (-4.7%)
Professional	+26.7% (+39.9%)	+27.1% (+44.2%)	+23.1% (+38.2%)
Service	-6.6% (-17.5%)	-7.3% (-20.8%)	-3.6% (-17.8%)
P values			
Looks	0.001 (0.001)	0.258 (0.193)	0.166 (0.086)
Occupation	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Looks X Occupation	0.203 (0.509)	0.408 (0.519)	0.003 (0.001)
^a Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, foreign born, gender, and dummy variables region/province of residence (77 and 79)			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

Relative to the grand mean, the log(hourly) wages of 'unskilled' and 'service' workers were from -14.2% to -22.7% below the mean, those in 'technical' group had wages from -1.1% below to +5.2% above the mean, while the 'professional' group had wages from +23.6% to +35.9% above the grand

mean after adjustments for covariates were made. Overall, there was one statistically significant interaction between attractiveness and occupation [Table 6.20 (iii)] both for unadjusted and adjusted effects. This interaction suggested that attractiveness might have the opposite effect in the 'professional' category in 1981 estimates. However, this or similar pattern was not repeated in the two other waves of the CQL data. Furthermore, because there were only 8 respondents who were rated as 'below average' in this occupational category in 1981, these estimates were likely to be relatively unstable thus introducing the possibility of a chance finding.

There was only one occupational category (i.e., 'service' workers) in which looks were systematically associated with wage premia in all three cross-sectional specifications. This was also true, albeit to a lesser degree, for 'unskilled' occupations. The first finding was consistent with our hypothesis while the second one was not. The effect of looks on wage profiles for the remaining two occupational categories, especially after adjustments for covariates were made, appeared to be either negligible or non-existent. These negligible effects of looks were particularly striking as far as the 'technical' group was concerned.

Figure 6 Adjusted and unadjusted effects of physical attractiveness ratings and occupation on log(hourly wages): cross-sectional estimates

Figure 6 (i)

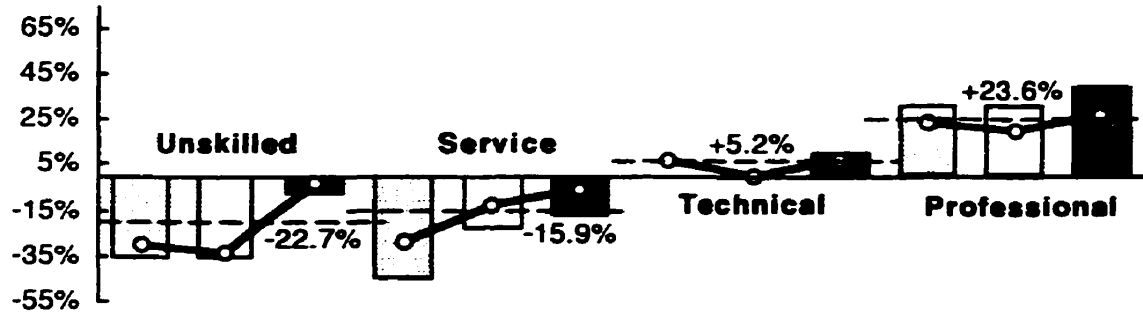


Figure 6 (ii)

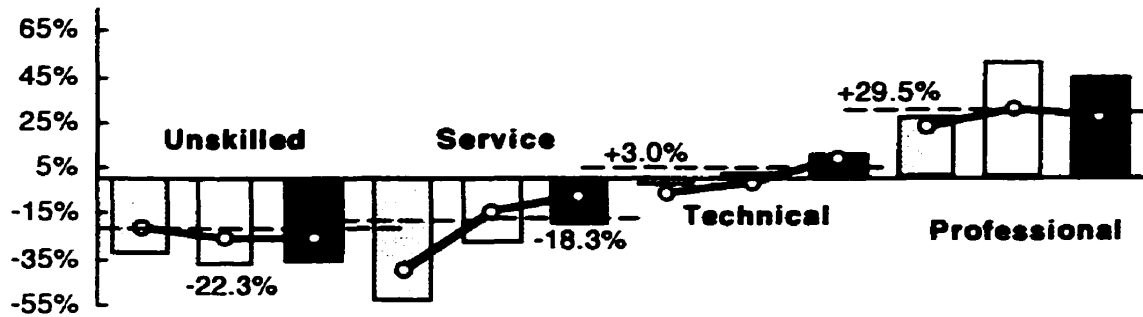
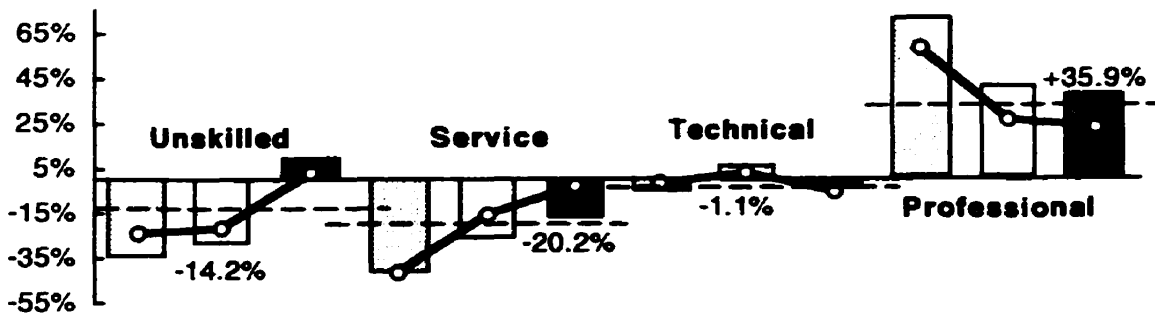


Figure 6 (iii)



□ Below average □ Average ■ Above average ○ Adjusted --- Group means
 0% = GRAND MEAN

As expected -- given the considerable overlap between the two methodologies used -- these findings were largely supported by the results based on the unstandardized regression coefficients estimated separately for each occupational category before and after adjusting for controls (Table 6.21). The effect of attractiveness on hourly wages for 'service' workers ranged from +7.9% to +13.7% (unadjusted effects: from +10.5% to +18.6%) for a one-unit change and the adjusted effects for 'unskilled' workers were quite substantial in two of the three estimates (1977: +20.8%; 1981: +18.5%). The effects for the remaining two occupational categories, especially after adjusting for controls, tended to be smaller or even negative. However, it is worth pointing out that two of the adjusted models produced statistically significant interactions thus suggesting that physical attractiveness might be more relevant in some occupational groupings than others. In fact, these findings lend some support to the thesis advanced by Waters (1985) that the greatest effects of attractiveness are to be found on the lowest skill levels. At the same time, the large variability in the estimated coefficients both in terms of direction and magnitude across the three cross-sectional samples suggests that these results provide a fairly limited support for our hypothesis and should be interpreted with a great deal of caution.

Hamermesh and Biddle (1994) also addressed this issue in their study utilizing three different methods to identify the occupations where looks were likely to enhance productivity. The first approach was based on the fifth digit of the Dictionary of Occupational Titles that measures the job's importance with regard to interpersonal communication. The second approach was based on the average rating of 508 occupations on a 3-point scale provided by 8 individuals concerning the importance of looks for each occupation. The third

measure was based on a survey of employers' views of the importance of an applicant's attractiveness for the most recent job vacancy (Holzer, 1993). Their analyses led them to conclude that while better-looking people sort into occupations where beauty is likely to be more productive, the impact of individuals' looks on their earnings is mostly independent of occupation thus suggesting the existence of pure employer discrimination. There was also some indication that attractiveness "may be more productive in some occupations perhaps as a result of customers' preferences" (1994: 1192).

Roszell et al. (1989) assessed a somewhat related issue of the effect of attractiveness on wages conditioned by occupational gender composition (i.e., 0-25% male; 26-50% male; 51-75% male; and 76-100% male). The gender composition of the respondent's job was created from the ratio of female to male workers in each occupation based on Pineo et al. classification (Pineo, Porter, McRoberts, 1977). Their analyses led them to suggest that "employment in a 'male' job could be a precondition for realizing any significant economic returns from physical attractiveness" (1989:554). However, a closer examination of the coefficients for the attractiveness variable (measured on a 5-point Likert scale and estimated separately for each gender composition subgroup) suggests that this effects was far from linear. More specifically, in the first subgroup (0-25% male) for every unit increase in the attractiveness ratings respondent's annual income increased by \$644, in the second category (26-50%) by \$822, while it decreased the annual income by \$24 in the third category (51-75%). Finally, in the male dominated occupations (76-100%), this effect increased to \$1,867 for a one unit change. This last coefficient was the only one that attained conventional significance level.

Overall, the results presented here as well as those reported in the studies by Hamermesh and Biddle (1994) and Roszell et al. (1989) seem to suggest that either attractiveness plays a relatively minor role in determining wage differences among occupations or that our measures of assessing the relative importance of looks in different occupations are quite inadequate. It is also plausible that both of these statements are true.

Table 6.21 Summary: hypothesis no. 6 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and occupation (u = 'unskilled', t = 'technical', p = 'professional', s = 'service') on log(hourly wages): Cross-sectional samples					
	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H_0
Unadjusted effects $H_0: \beta_u = \beta_t = \beta_p = \beta_s$ $H_a: \beta_u < \beta_t < \beta_p < \beta_s$ Direction ¹ Significance (p) ²	$\beta_u = +.101$ $\beta_t = +.074$ $\beta_p = +.092$ $\beta_s = +.186$ $u > t > p > s$ X .878 X	$\beta_u = +.001$ $\beta_t = +.077$ $\beta_p = +.021$ $\beta_s = +.128$ $u < t > p > s$ X .647 X	$\beta_u = +.120$ $\beta_t = +.037$ $\beta_p = +.044$ $\beta_s = +.105$ $u > t > p > s$ X .385 X	 0 of 3 0 of 3	 (0 of 6) NO
Adjusted effects³ $H_0: \beta_u = \beta_t = \beta_p = \beta_s$ $H_a: \beta_u < \beta_t < \beta_p < \beta_s$ Direction ¹ Significance (p) ²	$\beta_u = +.208$ $\beta_t = +.006$ $\beta_p = +.062$ $\beta_s = +.079$ $u > t > p > s$ X .100 ✓	$\beta_u = +.006$ $\beta_t = +.068$ $\beta_p = +.008$ $\beta_s = +.137$ $u < t > p > s$ X .423 X	$\beta_u = +.185$ $\beta_t = -.057$ $\beta_p = -.080$ $\beta_s = +.131$ $u > t > p > s$ X .003 ✓	 0 of 3 2 of 3	 (2 of 6) NO?
¹ $\beta_u < \beta_t < \beta_p < \beta_s$ ² F-ratio to test the increment in the R^2 (β_3 X looks X Occupation) ³ Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), frequency of supervision, marital status, foreign born, gender, and dummy variables region/province of residence (77 and 79)					

Summary

The effect of looks on wages might be modified by worker's occupation. However, these results provided limited support for hypothesis no. 6 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 7

The effect of attractiveness on wage profiles, all else being equal, should be largely irrelevant for workers whose wages were set by collective bargaining but attractiveness should play a positive role on wage profiles for those workers employed in the non-unionized settings.

The rationale for the hypothesis that the effect of union membership on earnings should vary for individuals who differ in terms of attractiveness was presented earlier both in terms of status generalization theory and alternative explanations. As expected, the analyses presented below indicated that union membership was beneficial as far as wages were concerned ($p < 0.000$ for unadjusted and $p \leq 0.06$ for adjusted effects). Workers employed in the unionized settings earned from +6.5% to 10.6% more relative to the grand mean while those employed in the non-unionized settings received wage penalties ranging from -3.6% to -6.9% after adjusting for covariates.

The interaction terms involving physical attractiveness and union membership (Table 6.22 and Figure 7) produced one statistically significant effect in cross-sectional estimates. Furthermore -- while not statistically significant -- there was also some indication that the effect of looks was not

uniform for unionized and non-unionized workers in the remaining two data sets. More specifically, attractiveness was largely irrelevant to wage profiles in unionized settings while a familiar pattern of differential returns to looks was clearly visible for the non-unionized workers.

Table 6.22 Adjusted and unadjusted effects of physical attractiveness ratings and union status on log(hourly wages)^a: cross-sectional samples

Attractiveness and union status	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average			
Non-unionized	-12.8% (-32.3%) ^b	-21.8% (-27.8%)	-8.1% (-22.9%)
Unionized	+11.7% (+6.5%)	+6.1% (+17.7%)	+4.9% (+8.3%)
Average			
Non-unionized	-11.4% (-11.8%)	-5.4% (-11.2%)	-3.1% (-10.2%)
Unionized	+8.4% (+9.2%)	+8.0% (+13.0%)	+3.0% (+15.1%)
Above average			
Non-unionized	+5.3% (+6.6%)	+0.7% (+2.8%)	-1.8% (-5.8%)
Unionized	+6.2% (+10.6%)	+8.7% (+13.9%)	+9.5% (+21.8%)
<i>P values</i>			
Looks	0.087 (0.004)	0.206 (0.160)	0.491 (0.144)
Union	0.001 (0.000)	0.003 (0.000)	0.063 (0.000)
Looks X Union	0.009 (0.023)	0.370 (0.122)	0.702 (0.916)
^a Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, public sector status (79 and 81), frequency of supervision, marital status, foreign born, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

The unstandardized regression coefficients (β - slopes) for the effect of physical attractiveness ratings measured on a 3-point Likert type scale and estimated separately for unionized and non-unionized workers before and after adjusting for controls (Table 6.23) also provided some support for the

hypothesized relationship between union membership and attractiveness and their conditional effect on wage profiles. Four of the estimated coefficients (two unadjusted and two adjusted), produced not only a pattern of coefficients that was consistent with our expectations but also resulted in statistically significant p values in three of the estimates. The effect of attractiveness on hourly wages for non-unionized workers in these two data sets was quite substantial and it ranged from +6.8% to +8.5% (unadjusted effects: from +14.7% to +18.9%) for a one-unit change while the effects for unionized workers were near zero in two of the three estimates (1977 and 1979).

Overall, these findings provide some support for the hypothesized relationship between union membership and attractiveness and their conditional effect on wage profiles. These results seem to provide additional evidence to the literature that unions might reduce discriminatory effects among their members (Bamberger, Admatidvir, Harel, 1995). However, as indicated earlier, our data do not allow us to assess whether differential wage returns accorded to individuals who differ in terms of attractiveness are due to promotional favouritism/discrimination, differences in productivity, or both. Consequently, it is impossible to conclude which group of workers, if any, and in which working environment (unionized vs. non-unionized) might be illegitimately over- or under- rewarded. The issue of union membership was not addressed by previous studies examining the relationship between physical attractiveness and economic success.

Figure 7 Adjusted and unadjusted effects of physical attractiveness ratings and union membership on log(hourly wages): cross-sectional estimates

Figure 7 (i)

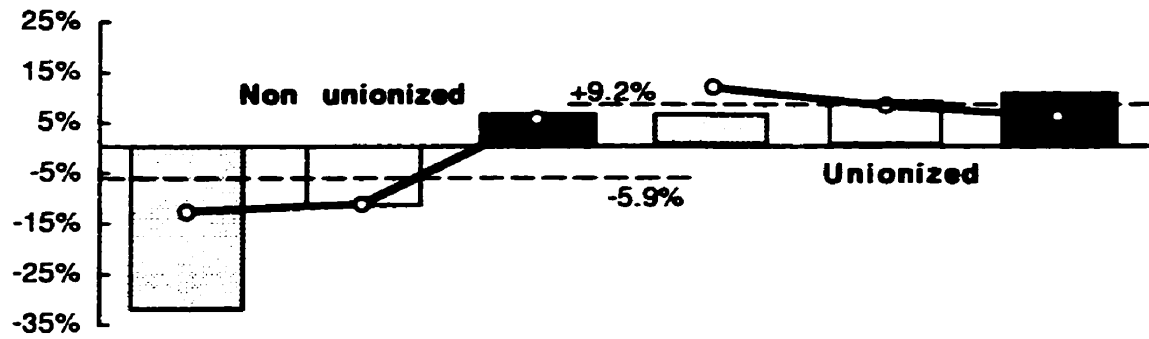


Figure 7 (ii)

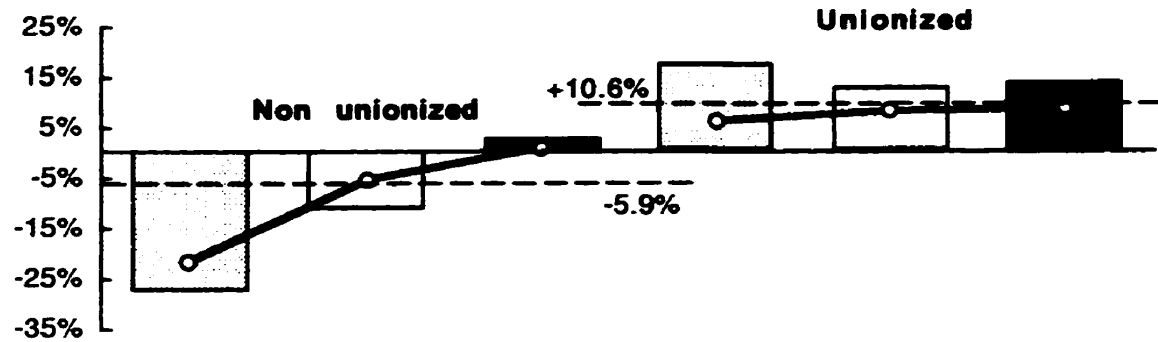
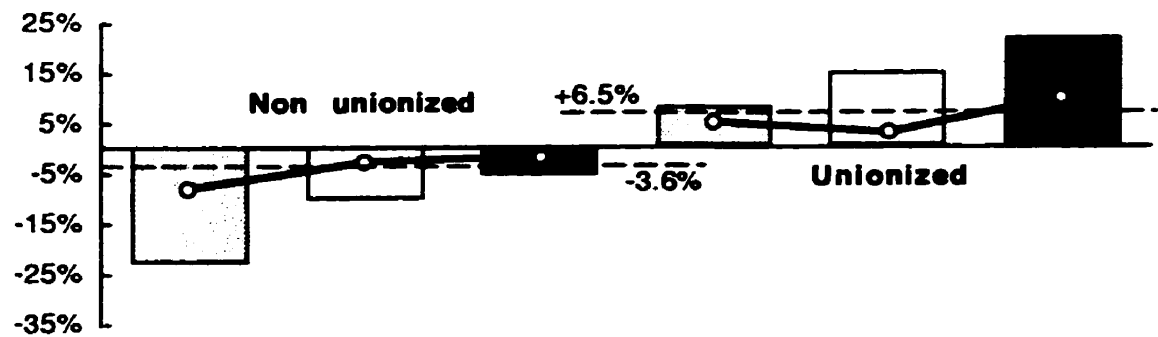


Figure 7 (iii)



Below average
 Average
 Above average
 Adjusted
 Group means

0% = GRAND MEAN

Table 6.23 Summary: hypothesis no. 7

Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and union status (ν = 'non unionized', u = 'unionized') on $\log(\text{hourly wages})$: Cross-sectional samples

	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H ₀
Unadjusted effects					
H ₀ : β _{NU} = β _U	β _{NU} =+.189	β _{NU} =+.147	β _{NU} =+.062		(4 of 6) YES?
H _a : β _{NU} > β _U	β _U =+.018	β _U =-.003	β _U =+.067		
Direction(Δ) ¹	+.171 ✓	+.150 ✓	-.005 ✗	2 of 3	
Significance (p) ²	.006 ✓	.044 ✓	.941 ✗	2 of 3	
Adjusted effects³					
H ₀ : β _{NU} = β _U	β _{NU} =+.068	β _{NU} =+.085	β _{NU} =+.029		(3 of 6) ?
H _a : β _{NU} > β _U	β _U =-0.019	β _U =+.007	β _U =+.053		
Direction(Δ) ¹	+.087 ✓	+.078 ✓	-.024 ✗	2 of 3	
Significance (p) ²	.003 ✓	.176 ✗	.697 ✗	1 of 3	

¹ Δ (β_{NU} - β_U)

² F-ratio to test the increment in the R² (β₃ X_{looks}X_{Union status})

³ Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, public sector status (79 and 81), frequency of supervision, marital status, foreign born, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)

Summary

The effect of looks on wages might be modified by whether wages are set by collective bargaining. Overall, these results provided some support for hypothesis no. 7 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 8

The effect of attractiveness on wage profiles, all else being equal, should yield higher returns as the amount of job tenure (years with the same employer) increases.

In order to accommodate estimation of these interactive terms within the MANCOVA framework the job tenure was recoded into a categorical variable (i.e., ' ≤ 2 years'; '3 - 10 years'; and ' ≥ 11 years'). These values were intended to corresponded to "low", "medium" and "high" values of years with the same employer in the year-specific data. The cross-sectional specifications presented in Table 6.24 suggested that, indeed, wages of workers who accumulated longer job tenures tended to be significantly higher in all cross-sectional models. The adjusted group means depicted in Figure 8 indicated that wages of those workers who had ≤ 2 years of job tenure were from -16.6% to -7.9% lower than the grand mean while those who had ≥ 11 years of tenure earned from +4.7% to +7.0% above the grand mean after adjustment for covariates. Although the relationship between job tenure and wage profiles is frequently estimated using a second-degree polynomial function, there was little indication in these specifications that tenure-wage profiles were concave. The wages of workers who had intermediate levels of tenure (3 - 10 years) hovered around the grand mean. These estimates also confirmed the relevance of looks as far as wage profiles were concerned in four of the models specified (adjusted and unadjusted effects, 1977 and 1979).

Table 6.24 Adjusted and unadjusted effects of physical attractiveness ratings and job tenure on log(hourly wages)^a: cross-sectional samples

Attractiveness and job tenure	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average			
≤ 2 years	-2.2% (-24.9%) ^b	-32.9% (-40.5%)	-6.8% (-25.0%)
3 - 10 years	-1.5% (-14.0%)	-10.1% (-27.2%)	+2.7% (-1.9%)
≥ 11 years	-4.5% (-10.8%)	+1.9% (+22.2%)	-2.6% (-1.3%)
Average			
≤ 2 years	-17.4% (-23.6%)	-11.1% (-22.5%)	-3.9% (-16.5%)
3 - 10 years	-1.6% (-1.2%)	+4.3% (+2.7%)	-6.1% (-8.7%)
≥ 11 years	+8.4% (+12.4%)	+2.3% (+12.5%)	+8.5% (+18.3%)
Above average			
≤ 2 years	-2.7% (-7.6%)	-7.7% (-19.4%)	-11.2% (-19.7%)
3 - 10 years	+3.2% (+5.1%)	+4.7% (+14.0%)	+5.5% (+7.7%)
≥ 11 years	+17.6% (+33.1%)	+13.8% (+27.1%)	+7.3% (+20.0%)
<i>P values</i>			
Looks	0.013 (0.000)	0.028 (0.009)	0.914 (0.261)
Tenure	0.062 (0.000)	0.001 (0.000)	0.158 (0.000)
Looks X Tenure	0.332 (0.268)	0.506 (0.241)	0.141 (0.203)
^a Adjusted for continuous and indicator variables measuring education, experience and its square, union membership, public sector status (79 and 81), frequency of supervision, marital status, foreign born, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

There was little evidence to suggest that the relationship between attractiveness and wage profiles was contingent on the amount of job tenure both before and after adjusting for the relevant covariates as none of the interactive effects reached conventional levels of significance. Despite considerable inter-models variations the overall pattern of results suggested

Figure 8 Adjusted and unadjusted effects of physical attractiveness ratings and job tenure on log(hourly wages): cross-sectional estimates

Figure 8 (i)

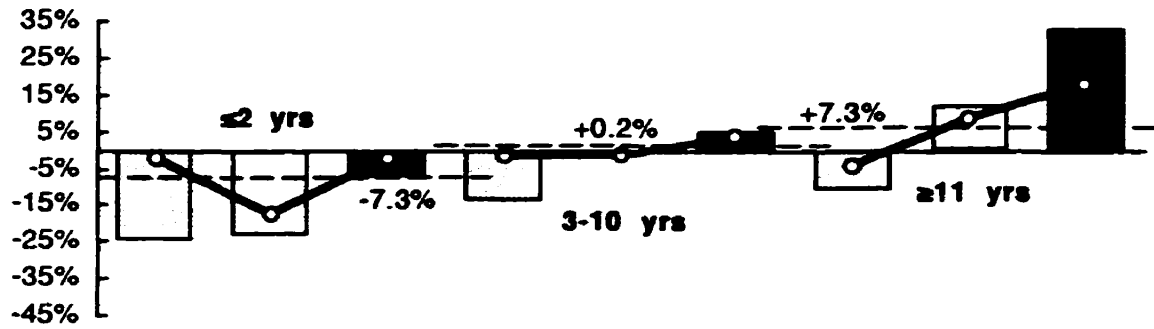


Figure 8 (ii)

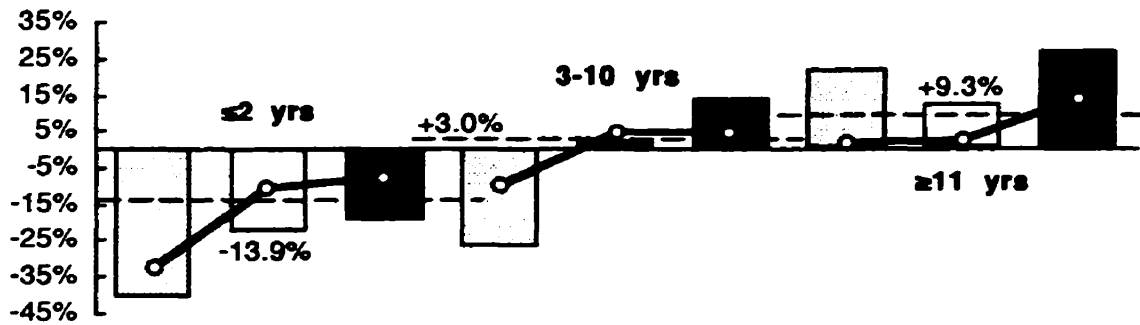
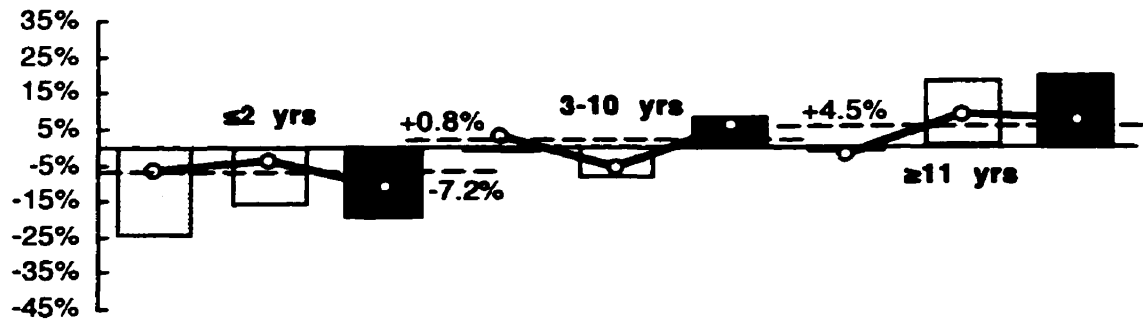


Figure 8 (iii)



☐ Below average
 ☐ Average
 ☒ Above average
 ☒ Adjusted
 - - - Group means
0% = GRAND MEAN

that the effects of physical attractiveness on wage profiles were fairly uniform and not conditioned by job tenures as predicted by status generalization theory. These effects, once again, tended to be more visible before adjustments for the relevant controls were made.

According to Granovetter (1986), the relation between the length of tenure and the quality of a job-worker match advanced by the neoclassical theorists (see Jovanovic, 1979; Prescott and Visscher, 1980) is largely indeterminate and represents what have been called, in biology, "adaptive stories". Furthermore, he argues that this tendency to tell "adaptive stories" about labour market institutions resulted in the corresponding neglect of the embeddedness of economic action in social-structural and demographic constraints. However, there is little in the results presented here to suggest that physical attractiveness might be one of the neglected individual attributes in the relationship between the length of tenure and wage profiles.

The results based on the unstandardized regression coefficients (β - slopes) for the effects of physical attractiveness *within* each level of job tenure (Table 6.25) produced all but one positive coefficients thus suggesting that looks played a positive role on wages regardless of the amount of job tenure. In one of the unadjusted models (1977) the effect of attractiveness was the strongest for those workers who had ≥ 11 years of tenure while in the remaining two models the effect of looks was the strongest for those workers who had from 3 to 10 years of tenure (+21.3% versus +15.7% and +13.0% for a one-unit change, respectively). The adjusted coefficients tended to be smaller and they indicated that the effect of attractiveness on wages was the strongest for a different level of job tenure in each of the data sets (1977: ' ≤ 2 years'; 1979: ≥ 11

years; 1981: '3 - 10 years'). None of the interactive effects (both unadjusted and adjusted models) reached statistically significant p values. Neither Roszell et al. (1989) nor Hamermesh and Biddle (1994) tested any higher-level interactions similar to the one estimated above.

Table 6.25 Summary: hypothesis no. 8 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and job tenure (1 = '≤ 2 years', 2 = '3-10 years', 3 = '≥ 11 years') on log(hourly wages): Cross-sectional samples					
	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H ₀
Unadjusted effects H ₀ : $\beta_1 = \beta_2 = \beta_3$ H _a : $\beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta_{(1)} = +.121$ $\beta_{(2)} = +.078$ $\beta_{(3)} = +.213$ 1>2<3 ✗ .268 ✗	$\beta_{(1)} = +.068$ $\beta_{(2)} = +.157$ $\beta_{(3)} = +.076$ 1<2<3 ✗ .863 ✗	$\beta_{(1)} = +.001$ $\beta_{(2)} = +.130$ $\beta_{(3)} = +.068$ 1<2<3 ✗ .460 ✗	 0 of 3 0 of 3	 (0 of 6) NO
Adjusted effects³ H ₀ : $\beta_1 = \beta_2 = \beta_3$ H _a : $\beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta_{(1)} = +.098$ $\beta_{(2)} = +.030$ $\beta_{(3)} = +.081$ 1>2<3 ✗ .654 ✗	$\beta_{(1)} = +.070$ $\beta_{(2)} = +.034$ $\beta_{(3)} = +.081$ 1>2<3 ✗ .887 ✗	$\beta_{(1)} = -.050$ $\beta_{(2)} = +.081$ $\beta_{(3)} = +.018$ 1<2<3 ✗ .443 ✗	 0 of 3 0 of 3	 (0 of 6) NO
¹ $\beta_1 < \beta_2 < \beta_3$ ² F-ratio to test the increment in the R ² (β_3 X looks X tenure) ³ Adjusted for continuous and indicator variables measuring education, experience and its square, union membership, public sector status (79 and 81), frequency of supervision, marital status, foreign born, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)					

Summary

The effect of looks on wages was not modified by job tenure. Overall, these results provided no support for hypothesis no. 8 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 9

The effect of attractiveness on wage profiles, all else being equal, should be stronger when indirect measures of competence or productivity rather than the direct ones are possible or used.

The analyses presented below were designed to examine whether the relationship between physical attractiveness and wage profiles was conditioned by the frequency of on-the-job supervision in the cross-sectional models. It was hypothesized that the returns to attractiveness might be higher whenever direct measurement of productivity is more difficult or impossible to observe. We used the variable measuring the self-reported frequency of supervision as a proxy for whether productivity can be easily or directly assessed. While not directly relevant to the attractiveness issue, the efficiency wage theory does suggest a trade-off between wages and supervision. There is some evidence in the literature that high levels of supervision are indeed associated with lower wage levels (Rebitzer, 1995). Our own analyses presented earlier (see Tables 6.6 and 6.7: 1977 estimates) also provided some evidence that the closeness of supervision might be associated with differential wage profiles. The effect for the frequency of supervision on wages was statistically significant in 1997 ('< Daily' = +2.4% vs. 'Daily' = -7.3%), the remaining two estimates not only failed to produce statistically effects but also reversed this pattern (Table 6.26).

Table 6.26 Adjusted and unadjusted effects of physical attractiveness ratings and frequency of supervision on log(hourly wages)^a: cross-sectional samples

Attractiveness and supervision	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average			
< Daily	+2.0% (-7.9%) ^b	-14.8% (-13.4%)	-5.0% (-6.6%)
Daily	-16.4% (-38.2%)	-5.0% (-23.8%)	+1.3% (-18.4%)
Average			
< Daily	-1.8% (+0.2%)	-0.8% (+1.1%)	-0.7% (+1.2%)
Daily	-8.7% (-15.3%)	+0.1% (-13.9%)	-2.4% (-12.1%)
Above average			
< Daily	+6.7% (+13.9%)	+1.4% (+8.6%)	+1.8% (+4.2%)
Daily	+2.9% (-7.7%)	+13.7% (-3.6%)	+4.5% (-0.2%)
<i>P values</i>			
Looks	0.016 (0.002)	0.066 (0.110)	0.569 (0.227)
Supervision	0.052 (0.000)	0.238 (0.124)	0.680 (0.152)
Looks X Supervision	0.575 (0.587)	0.387 (0.955)	0.807 (0.714)
^a Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), marital status, foreign born, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

Table 6.26 and Figure 9 present numerical and graphical results of these estimates in cross-sectional samples. The effects of attractiveness, while not always significant, indicated a fairly uniform pattern of increased wage premia with increased attractiveness regardless of the frequency of on-the-job supervision. These effects were particularly visible in the unadjusted specifications. None of the estimated interaction effects was statistically significant at conventional levels and there was little to support the hypothesis

Figure 9 Adjusted and unadjusted effects of physical attractiveness ratings and frequency of supervision on log(hourly wages): cross-sectional estimates

Figure 9 (i)

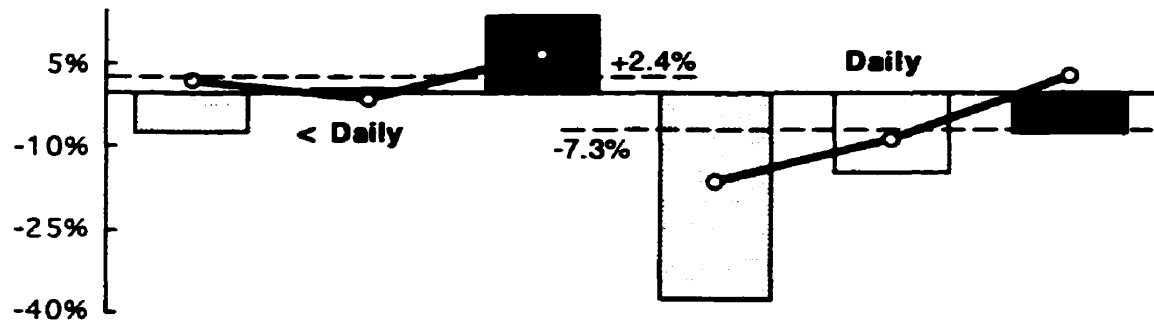


Figure 9 (ii)

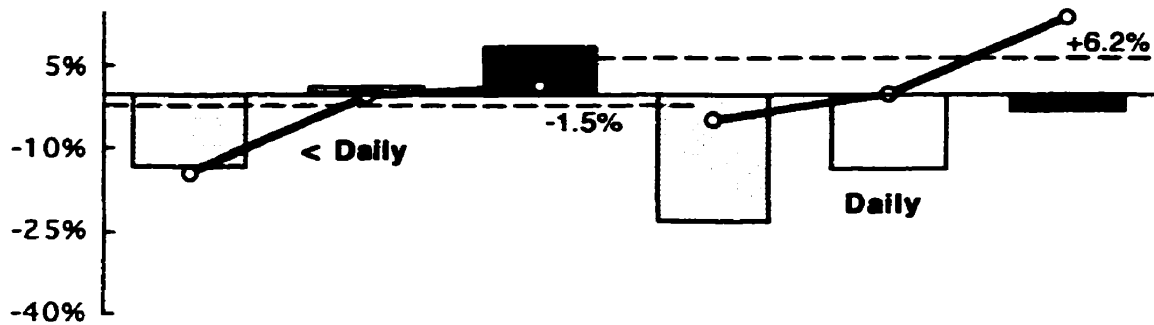
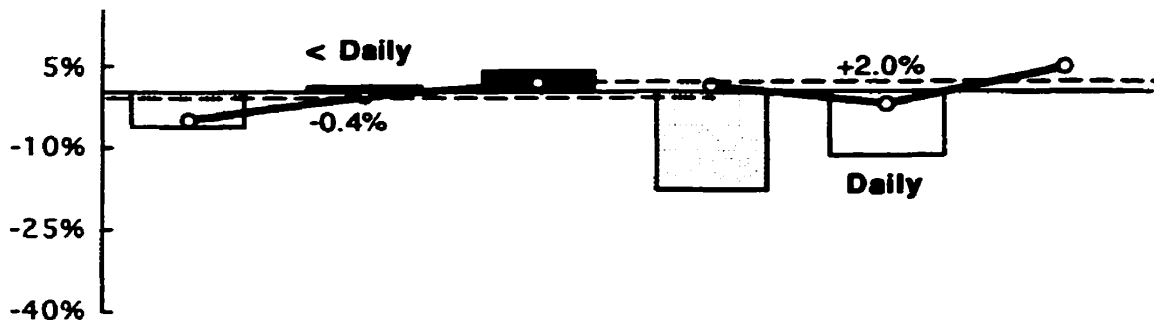


Figure 9 (iii)



□ Below average □ Average ■ Above average ○ Adjusted --- Group means
 0% = GRAND MEAN

that the effect of attractiveness on wage profiles might be conditioned by the closeness or frequency of on-the-job supervision in our data.

These conclusions were further confirmed in the analyses based on the unstandardized regression coefficients (β - slopes) for the effects of physical attractiveness measured on a 3-point Likert type scale and estimated separately for those workers who reported frequent ('Daily' - "Several times a day" and "Once, twice a day") versus less frequent on-the-job supervision (Table 6.27). Contrary to our expectations, the returns to attractiveness -- while not significantly different -- tended to be 'steeper' in all but one of the models specified (1977: unadjusted effects) for those workers who reported more frequent level of supervision. These effects ranged from +8.6% to +9.6% (unadjusted effects : from +10.1% to +11.8%) for the more frequently supervised workers and from +2.4% to +5.3% (unadjusted effects: from +4.0% to +12.3%) for the less frequently supervised workers for a one-unit change in the attractiveness ratings after adjusting for controls. While none of the interactive terms reached conventional significance levels, the possibility that the effects of physical attractiveness on wages might be more pronounced as the frequency of supervision increases were puzzling and difficult to accommodate within the status generalization framework. This, or similar issue, was not addressed neither by Roszell et al. (1989) nor by Hamermesh and Biddle (1994) in their studies.

Table 6.27 Summary: hypothesis no. 9

Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and frequency of supervision (<d = 'less than daily', d = 'daily') on log(hourly wages): Cross-sectional samples

	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H_0
<i>Unadjusted effects</i>					
$H_0: \beta_{<d} = \beta_d$	$\beta_{<d}=+.123$	$\beta_{<d}=+.093$	$\beta_{<d}=+.040$		(1 of 6) NO
$H_a: \beta_{<d} > \beta_d$	$\beta_d=+.118$	$\beta_d=+.102$	$\beta_d=+.101$		
Direction (Δ) ¹	+005 ✓	-.009 ✗	-.061 ✗	1 of 3	
Significance (p) ²	.935 ✗	.924 ✗	.466 ✗	0 of 3	
<i>Adjusted effects³</i>					
$H_0: \beta_{<d} = \beta_d$	$\beta_{<d}=+.053$	$\beta_{<d}=+.051$	$\beta_{<d}=+.024$		(0 of 6) NO
$H_a: \beta_{<d} > \beta_d$	$\beta_d=+.086$	$\beta_d=+.096$	$\beta_d=+.092$		
Direction (Δ) ¹	-.033 ✗	-.045 ✗	-.068 ✗	0 of 3	
Significance (p) ²	.463 ✗	.414 ✗	.812 ✗	0 of 3	

¹ $\Delta(\beta_{<d} - \beta_d)$

² F-ratio to test the increment in the R^2 (β_3 XlooksXSupervision)

³ Adjusted for continuous and indicator variables measuring education, experience and its square, job tenure, union membership, public sector status (79 and 81), marital status, foreign born, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)

Summary

The effect of looks on wages might be modified by the frequency of on-the-job supervision. Overall, these results provided no support for hypothesis no. 9 tested in cross-sectional samples.

Cross-sectional Results: Hypothesis no. 10

The effect of attractiveness on wage profiles, all else being equal, should be stronger as the level of formal schooling increases.

This hypothesis was based on the aggregating assumption of status generalization theory which claims that the highest expectation states should exist whenever attractiveness is combined with other diffuse status characteristics. This hypothesis further assumes that formal education, at least to some degree, can be viewed as a diffuse status characteristic within the labour markets. In order to accommodate estimation of these interactive terms within the MANCOVA framework the years of formal schooling were recoded into a categorical variable (i.e., ' ≤ 12 years'; '13 - 14 years'; and ' ≥ 15 years'). These values were intended to corresponded to "Low", "Intermediate" and "High" levels of formal education in the year-specific data. Under the assumption that physical attractiveness ratings were independent of the respondent's level of education such an approach should result in a sufficient number of a cases in each of the cells (i.e., > 10 cases). However, this expectation was not met in two of the three waves of the CQL data (i.e., 1977 and 1981) thus resulting in a disproportionate representation of the 'below average' workers at the higher levels of education and their corresponding over-representation at the lower levels. This also meant that four of the six 'below average by education' cells in those two years included fewer than 10 subjects.

Table 6.28 Adjusted and unadjusted effects of physical attractiveness ratings and years of education on log(hourly wages)^a: cross-sectional samples

Attractiveness and education	1977 (n=787)	1979 (n=807)	1981 (n=910)
	(i)	(ii)	(iii)
Below average			
≤ 12 years	-6.1% (-15.9%) ^b	-22.9% (-27.4%)	-15.0% (-25.3%)
13 - 14 years	-19.6% (-28.3%)	-14.7% (-28.4%)	+0.9% (+4.5%)
≥ 15 years	+3.1% (-5.7%)	+4.6% (+20.6%)	+23.4% (+41.2%)
Average			
≤ 12 years	-11.6% (-15.6%)	-9.1% (-18.2%)	-6.2% (-16.2%)
13 - 14 years	+0.5% (-0.5%)	+4.8% (+2.1%)	-1.7% (-1.4%)
≥ 15 years	+16.6% (+37.4%)	+11.2% (+30.5%)	+7.2% (+24.6%)
Above average			
≤ 12 years	+6.4% (-2.4%)	+0.7% (-10.6%)	-0.7% (-10.3%)
13 - 14 years	+4.0% (+2.9%)	+8.0% (+5.1%)	-0.3% (-1.3%)
≥ 15 years	+13.2% (+31.9%)	+9.7% (+28.5%)	+10.1% (+23.3%)
P values			
Looks	0.014 (0.025)	0.055 (0.081)	0.649 (0.871)
Education	0.121 (0.000)	0.009 (0.000)	0.012 (0.000)
Looks X Education	0.073 (0.120)	0.544 (0.666)	0.628 (0.562)
^a Adjusted for continuous and indicator variables measuring experience and its square, job tenure, union membership, public sector status (79 and 81), marital status, foreign born, supervision, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

The overall effect of education on wages was significant in most specifications. The adjusted wages of workers with ≤ 12 years of formal schooling were from -2.5% to -7.8% below the grand mean while those with university education had wages from +11.6% to 12.9% above it. The wages of workers with between 13-14 years of formal schooling were either slightly

Figure 10 Adjusted and unadjusted effects of physical attractiveness ratings and years of education on log(hourly wages): cross-sectional estimates

Figure 10 (i)

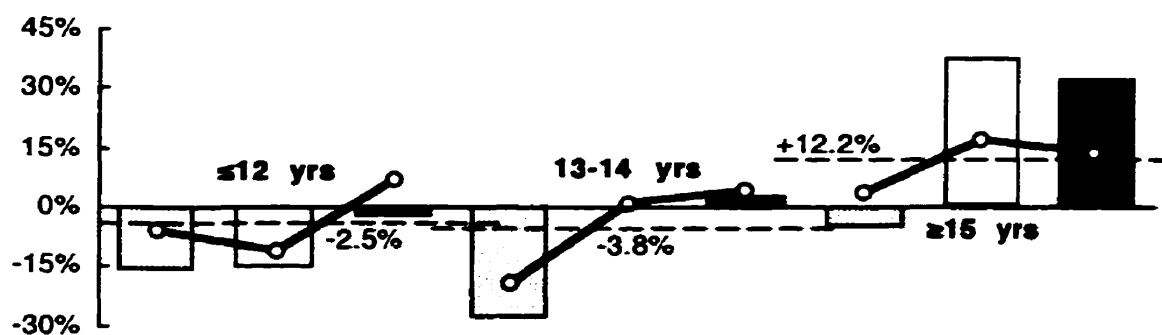


Figure 10 (ii)

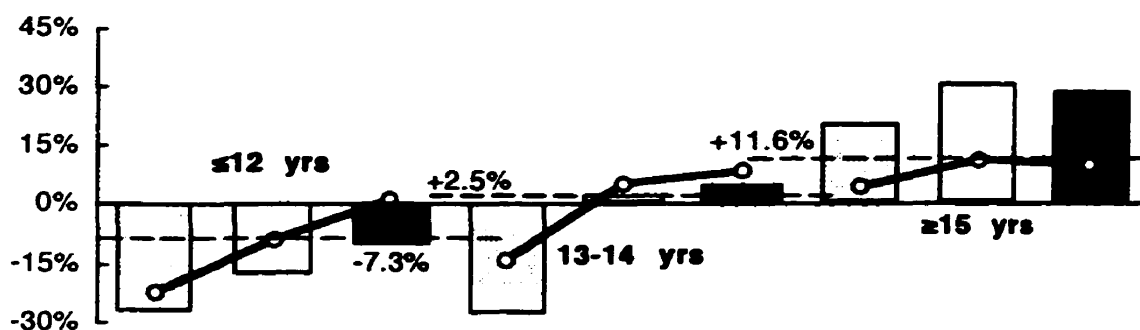
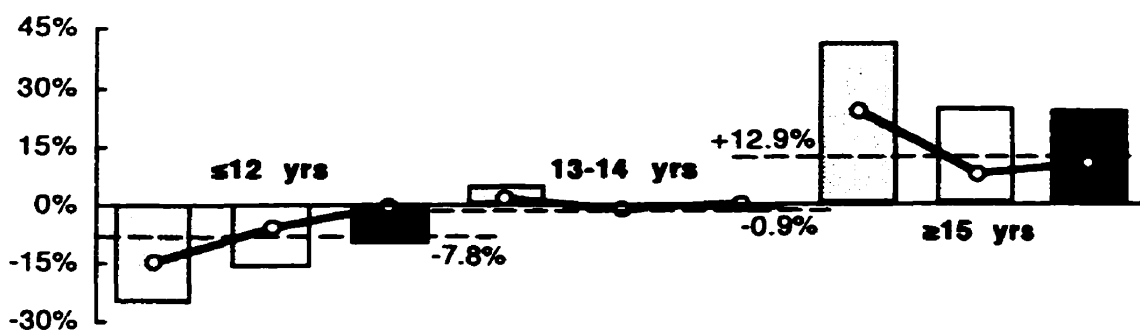


Figure 10 (iii)



□ Below average □ Average ■ Above average ○ Adjusted --- Group means
 0% = GRAND MEAN

above or below the grand mean (from -3.8% to +2.5%). There was also some indication that there might be a significant interaction between looks and education in the 1977 data. [Table 6.28 (i) and Figure 10 (i)]. This potential interaction effect should be interpreted with caution as there were only 7 individuals who were rated as 'below average' in 13-14 years of schooling and 6 in ≥ 15 years category. In general, the unadjusted effects were larger and suggested that the increased returns to attractiveness were applicable at each level of schooling. This pattern was noticeably different for workers with ≥ 15 years of schooling ($n=10$) in the 1981 estimates where 'below average' workers -- both before and after adjusting for covariates -- appeared to receive the largest wage premia [Figure 10 (iii)].

The results based on the unstandardized regression coefficients (β - slopes) for the effects of physical attractiveness *within* each educational level (Table 6.29) failed to produce any statistically significant interactions. However, contrary to our hypothesis, there was some evidence that the effect of attractiveness might be stronger at the lower levels of formal education. In all three adjusted specifications the coefficients for attractiveness for workers with ≤ 12 years of formal schooling were the largest and they ranged from +6.9% to +9.1% for a one-unit change in the attractiveness ratings. At the same time, the effects for the remaining two educational categories were near zero in two of the cross-sectional data sets (1979 and 1981). While not statistically significant, these results seem to suggest that attractiveness effects might be particularly relevant at lower levels of educational attainment where it may be easier to substitute educational requirements with physical attractiveness. Because the number of workers who were rated as 'below average' at the higher levels of educational attainments was very small, it remains unclear whether the effects

of attractiveness on wage profiles were equally applicable or not. The issue of conditional effects of attractiveness and education on wage profiles was not addressed by previous studies.

Table 6.29 Summary: hypothesis no. 10 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and years of education (1 = '≤12 years', 2 = '13-14 years', 3 = '≥15 years') on log(hourly wages): Cross-sectional samples					
	1977 n=787	1979 n=807	1981 n=910	Summary	Reject H ₀
Unadjusted effects H ₀ : $\beta_1 = \beta_2 = \beta_3$ H _a : $\beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta(1) = +.091$ $\beta(2) = +.073$ $\beta(3) = +.019$ 1>2>3 ✗ .561 ✗	$\beta(1) = +.080$ $\beta(2) = +.114$ $\beta(3) = +.007$ 1<2<3 ✗ .408 ✗	$\beta(1) = +.069$ $\beta(2) = -.008$ $\beta(3) = -.037$ 1>2<3 ✗ .153 ✗	 0 of 3 0 of 3	 (0 of 6) NO
Adjusted effects³ H ₀ : $\beta_1 = \beta_2 = \beta_3$ H _a : $\beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta(1) = +.091$ $\beta(2) = +.056$ $\beta(3) = +.047$ 1>2>3 ✗ .154 ✗	$\beta(1) = +.073$ $\beta(2) = -.006$ $\beta(3) = -.017$ 1>2<3 ✗ .163 ✗	$\beta(1) = +.069$ $\beta(2) = +.007$ $\beta(3) = +.003$ 1>2>3 ✗ .280 ✗	 0 of 3 0 of 3	 (0 of 6) NO
¹ $\beta_1 < \beta_2 < \beta_3$ ² F-ratio to test the increment in the R ² (β_3 XlooksXeducation) ³ Adjusted for continuous and indicator variables measuring experience and its square, job tenure, union membership, public sector status (79 and 81), marital status, foreign born, supervision, gender, and dummy variables measuring occupation and region/province of residence (77 and 79)					

Summary

The effect of looks on wages might be modified by worker's level of formal schooling. Overall, these results provided no support for hypothesis no. 10 tested in cross-sectional samples.

Cross-sectional Results: Summary

Table 6.30 provides an overview of all the hypotheses tested in the cross-sectional samples. According to the cross-sectional estimates, physical attractiveness was associated with economic success even after we had adjusted for the key human capital and institutional characteristics of the workers. More specifically, the 'above average' rated workers received pay premia ranging from +2.2% to +6.1% while those 'below average' received pay penalties ranging from -2.7% to -13.0% relative to the grand mean. The 'average' rated workers received pay penalties ranging from -0.7% to -3.4%. The cross-sectional specifications that utilized physical attractiveness variable measured on an ordinal 3-point scale indicated that a one unit change in attractiveness ratings was associated with earnings premia ranging from +2.9% to +8.8%. The results from these estimates tended to replicate and extend several findings from previous work on this topic, including two studies that utilized data derived from the CQL survey (Roszell, Kennedy, Grabb, 1989; Hamermesh and Biddle, 1994).

As indicated elsewhere, we were also interested to assess whether the effects of attractiveness were symmetrical or not. The existing evidence generated in social-psychological research is much more likely to emphasize the positive consequences of good looks rather than the negative

consequences of plainness. Our own estimates of 'main effects' suggested that in the labour market the effect of attractiveness on wages tends to be symmetrical. That is, workers who were rated as above average received pay premia ranging from 3% to 10% while those rated as below average received pay penalties ranging from 4% to 12% (see Table 6.5). These penalties and premia were comparable to those found by Hamermesh and Biddle (1994) who reported that penalty for plainness in their study was 5 to 10 percent, and that it was slightly larger than the premium for beauty. Because Roszell et al. (1989) utilized somewhat different methodology the results reported in their study were not directly comparable with our estimates.

Taken as a whole, the conditional relationships between attractiveness and earnings predicted by status generalization theory and tested in cross-sectional models found limited support. Less than a handful of these interactive effects reached statistical significance at conventional levels. Furthermore, the overall patterns emerging from these analyses tended to be either fairly weak and inconsistent or pointing out to conditional relationships that were different from those originally hypothesized. This pattern was equally applicable both to unadjusted and adjusted specifications and regardless of whether the MANCOVA or regression approach was used.

To summarize, the cross-sectional estimates indicated that the effect of physical attractiveness on earnings was a plausible one but not likely to be substantially affected by other characteristics such as workers' gender, country of births, labour force experience, or job tenure. At the same time, there was some indication that characteristics such as firm size, occupation, union membership, frequency of on-the-job supervision, and level of formal schooling

might modify the relationship between physical attractiveness and wages. However, more often than not, these conditional relationships appeared to be small, unstable and, at times, contrary to our predictions.

Table 6.30 Overall summary: unadjusted and adjusted effects Cross-sectional estimates				
Hypothesis	Supported	Marginal evidence	Not supported	Different than hypothesized
Looks . unadjusted . adjusted	✓ ✓			
Looks x Gender . unadjusted . adjusted			✓ ✓	
Looks x Country of origin . unadjusted . adjusted		✓	✓	
Looks x Experience . unadjusted . adjusted			✓ ✓	
Looks x Firm size . unadjusted . adjusted		✓	✓	
Looks x Occupation . unadjusted . adjusted			✓ ✓	? ?
Looks x Union status . unadjusted . adjusted	✓	✓		
Looks x Job tenure . unadjusted . adjusted			✓ ✓	
Looks x Supervision . unadjusted . adjusted			✓ ✓	? ?
Looks x Education . unadjusted . adjusted			✓ ✓	? ?

RESULTS

PANEL SPECIFICATION

Panel specifications

If we were to terminate our study here we would probably conclude that physical attractiveness constitutes an independent and significant predictor of earnings. The possible flaw of such a conclusion is that what we have established thus far is merely an association between physical attractiveness ratings and wages and it is our interpretation that renders it to be a causal one. While panel studies generally provide stronger evidence about causation than cross-sectional research, their conclusions are by no means definite or problem-free. Biddle et al. (1985) reviewed the three major strategies for making causal inferences in panel studies (i.e., control, cross-lagged analysis and causal modeling) and concluded that each has its shortcomings and that causation is a mystical state, approachable but not attainable.

Regressing current log(hourly wages) on the lagged ratings of physical attractiveness, and other time-variant characteristics including wages, represents a much more stringent test of our hypotheses. Conceptually, the inclusion of lagged log(hourly wages) changes our estimates from wage to wage growth equations. That is, these models test whether physical attractiveness alone or contingent on other factors might be responsible for differential wage growth among workers who differed in terms of attractiveness at an earlier period. While the use of the temporal sequence in measurement alleviates somewhat the problem of establishing the causal ordering between the two main variables of interest, it also introduces problems of its own. These models are likely to be misspecified because the disturbance terms in earnings variables are not independent but instead are related to each other in a systematic manner. Consequently, the statistical significance of the coefficients estimated in those

models is potentially overstated. While this is certainly a limitation, it was felt that the benefits clearly outweigh the potential problems.

Such an approach was necessary as it provides a modest protection against potential simultaneity problems associated with cross-sectional specifications. These problems are not trivial and they are particularly likely to play a role when physical attractiveness and its role in wage determination process is examined. This is in part because attractiveness has more of a willful component than other ascriptive characteristics such as race or gender, hence the possibility of reverse causality needs to be seriously entertained. The possibility that workers who earn more can, in fact, improve to a greater extent their physical attractiveness by investing larger amounts of money on appearance related care or products might be one source of problems. Another plausible source involves a long-term effect of prior earnings or social background characteristics that jointly determine attractiveness as well as earnings in the years under study. If omitted variables affecting both physical attractiveness and wages were responsible for the higher wages of more attractive workers found in cross-sectional estimates they should disappear when panel analyses are used. Finally, the results from cross-sectional samples might reflect the possibility that assessors were biased in their evaluation of the respondent's physical attractiveness by the economic success of the evaluatees. Such a situation would generate significant coefficients for the effects of physical attractiveness ratings on earnings in cross-sectional specifications but due to its spurious nature would fail to manifest itself in the wage growth equations.

Assuming that the effects of physical attractiveness are not trivial and robust to a variety of specifications, the wage growth estimates should produce a

pattern of coefficients consistent -- if not in terms of statistically significant effects than at least in terms of the appropriate directions -- with differential wage growth based on physical attractiveness ratings. The hourly wages in the CQL panel subsamples increased on average by around 24% between each assessment period (see table 7.1: 1977 to 1979=24%; 1977 to 1981=50%; 1979 to 1981=24%). It is anticipated, therefore, that if physical attractiveness plays an important role in the wage determination process we should be able to demonstrate empirically that the wages of the more attractive individuals grew at a faster rate than of those who were less endowed or rated as such by the interviewers.

The explanatory variables utilized in panel specifications were the same as for the cross-sectional estimates, except that all the regressors were lagged, when appropriate, and that previous wages were added as one of the predictors in all adjusted specifications. Table 7.1 presents summary statistics for the final samples utilized in wage growth specifications. Because the rationale and interpretation for all the hypotheses tested below were identical to those specified in cross-sectional estimates, the reader is referred to Sections IV and VI for further details. For similar reasons this also applies as far as recodings of some variables and comparisons with previous studies are concerned.

Table 7.1 Summary statistics: panel data

Variable		1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
Hourly wages - current wave (\$)		9.17 (6.03) ^a	11.17 (6.41)	10.78 (6.30)
Hourly wages - previous wave (\$)		7.41 (4.30)	7.41 (4.26)	8.67 (5.65)
Education (in years)		12.85 (3.51)	12.85 (3.48)	12.83 (3.76)
Experience (in years)		18.89 (13.00)	18.42 (12.78)	20.12 (12.44)
Job tenure (in years)		8.38 (8.24)	8.28 (8.21)	8.60 (8.61)
Union membership		.42	.41	.38
Public sector ^b		----	----	.35
Frequency of supervision		.25	.24	.19
Male		.64	.64	.57
Married		.73	.73	.74
Foreign born		.21	.21	.20
Occupation	Professionals	.18	.18	.15
	Managers	.08	.08	.09
	Technicians	.08	.09	.11
	Supervisors	.07	.07	.10
	Skilled service workers	.10	.09	.12
	Craftsmen	.19	.19	.16
	Semi-skilled service workers	.18	.18	.17
	Unskilled workers	.12	.12	.10
Firm size (50+) ^b		----	----	.67
Region/province^d	Atlantic	.09	.09	.09
	Quebec	.31	.30	.30
	Ontario	.38	.40	.38
	Prairies	.13	.13	.13
	B.C.	.09	.08	.10
Attractiveness	Looks (mean ,SD)	3.35 (.66)	3.35 (.66)	3.31 (.63)
	Above Average	.37	.38	.35
	Average	.57	.56	.59
	Below Average	.06	.06	.06

^a Standard deviations appear in parentheses

^b Not available in 1977

Panel Results: Hypothesis no. 1

The effect of attractiveness on wage growth, all else being equal, should be positive.

This hypothesis, like in cross-sectional estimates, was tested utilizing several different sets of models and statistical approaches in panel data. The first set of models (Table 7.2) shows estimates of the reduced-form earnings equation applied to the three panel samples without controlling for lagged wages. Columns (i) and (iv) show estimates that regressed log(hourly wages) in 1979 on key human capital variables and two different codings of physical attractiveness assessed in 1977 (i.e., dummies and the original 5-point scale, respectively). Columns (ii) and (v) show estimates that regressed log(hourly wages) in 1981 on variables measured in 1977. Finally, columns (iii) and (vi) show estimates that regressed log(hourly wages) in 1981 on human capital variables measured in 1979. Despite a two year lag between the assessment of the dependent and independent variables, the key human capital variables continued to exert significant influence -- and in the expected directions -- on the log(hourly wages) both in 1979 and 1981. The effects of physical attractiveness expressed as a set of dummies on earnings [columns (i), (ii), and (iii)] were not statistically significant but in the expected direction for five of the six coefficients estimated. The coefficients presented in columns (iv), (v), and (vi) lend further support that lagged physical attractiveness ratings continued to exert a significant effect on current wages. The coefficients for 'looks' were significant in two of the three models estimated, indicating that a one unit change in the lagged attractiveness ratings was associated with 5% to 8% wage premia two and four years later, respectively (i.e., 1979 and 1981).

Table 7.2 Determinants of hourly wage, panel samples
Dependent Variable: Log(hourly wage)

Variable ^a	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
education	.0722 (.0000) ^b	.0662 (.0000)	.0590 (.0000)
experience	.0152 (.0019)	.0147 (.0022)	.0150 (.0030)
experience ²	-.0003 (.0069)	-.0003 (.0023)	-.0003 (.0069)
job tenure	.0106 (.0000)	.0108 (.0001)	.0059 (.0155)
union membership	.1017 (.0041)	.0963 (.0069)	.1746 (.0000)
male	.1867 (.0000)	.2001 (.0000)	.2179 (.0000)
above average looks	.0394 (.2864)	.0456 (.2219)	.0484 (.1915)
below average looks	-.1132 (.1280)	-.1263 (.0825)	.0376 (.6069)
Intercept	.7466 (.0000)	1.0501 (.0000)	1.0800 (.0000)
Adjusted R ²	.28	.26	.25
	(iv)	(v)	(vi)
education	.0725 (.0000)	.0665 (.0000)	.0591 (.0000)
experience	.0156 (.0014)	.0151 (.0016)	.0151 (.0029)
experience ²	-.0003 (.0050)	-.0003 (.0017)	-.0003 (.0067)
job tenure	.0106 (.0000)	.0108 (.0001)	.0061 (.0138)
union membership	.1006 (.0045)	.0951 (.0076)	.1719 (.0000)
male	.1870 (.0000)	.2016 (.0000)	.2180 (.0000)
looks	.0818 (.0467)	.0531 (.0510)	.0311 (.2610)
Intercept	.5911 (.0000)	.8729 (.0000)	.9945 (.0000)
Adjusted R ²	.28	.26	.25

^a All time-variant variables are lagged
^b Unstandardized regression coefficients, *P* values appear in parentheses

The second set of models (Tables 7.3, 7.4, and 7.5) present the results of these estimates once lagged earnings were introduced in the reduced (Table 7.3) and full models (Tables 7.4 and 7.5). This was undertaken in order to test whether the serial correlation in earnings might be responsible for a simultaneity between current wages and lagged ratings of physical attractiveness. As

expected, the number of statistically significant predictors of wage growth was substantially reduced in all models. In the reduced-form equations (Table 7.3), apart from the lagged log(hourly wages), there were only two other variables that were consistently associated with faster wage growth across the three panel data sets and in all six specifications. The coefficients for education suggested that each year of schooling was associated with wage growth premia ranging from 2.1% to 3.9%. The faster wage growth was also associated with worker's gender; as the wages of males grew +7.9% to +9.3% faster than those of females with comparable human capital characteristics. The coefficients for the physical attractiveness variables were all small, non-significant and largely inconsistent with the hypothesized directions. There were also some discrepancies between estimates utilizing physical attractiveness ratings coded as dummies and those that were based on attractiveness ratings entered as an ordinal-level variable.

The next two tables (Tables 7.4 and 7.5) present the results of similar specifications as those presented above but utilizing a much richer set of controls. The inclusion of these additional controls generally had the expected effect on the prior estimates and their level of significance. Of the added controls, only a few produced significant and relatively consistent coefficients as far as the growth of earnings was concerned. For example, there was some evidence for faster wage growth among married workers and across different occupational categories (e.g., 'managers', 'technicians', 'professionals', and 'skilled services').

Table 7.3 Determinants of hourly wage, panel samples
Dependent Variable: Log(hourly wage)

Variable ^a	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
log hourly wages	.5666 (.0000) ^b	.5994 (.0000)	.5996 (.0000)
education	.0384 (.0000)	.0294 (.0000)	.0211 (.0000)
experience	.0042 (.3135)	.0059 (.1441)	.0012 (.7741)
experience ²	-.00007 (.4332)	-.0001 (.0933)	-.00002 (.7697)
job tenure	.0053 (.0158)	.0034 (.1291)	-.0087 (.6638)
union membership	.0384 (.1959)	.0324 (.2790)	.0702 (.0153)
male	.0798 (.0114)	.0818 (.0107)	.0926 (.0016)
above average looks	-.0155 (.6177)	-.0118 (.7063)	.0077 (.7958)
below average looks	-.0842 (.1746)	-.0911 (.1337)	.0571 (.3269)
Intercept	.3743 (.0000)	.6552 (.0000)	.6778 (.0000)
Adjusted R ²	.50	.49	.53
	(iv)	(v)	(vi)
log hourly wages	.5652 (.0000)	.5986 (.0000)	.5996 (.0000)
education	.0385 (.0000)	.0296 (.0000)	.0212 (.0000)
experience	.0047 (.2543)	.0063 (.1166)	.0010 (.7970)
experience ²	-.00008 (.3634)	-.0002 (.0760)	-.00002 (.7824)
job tenure	.0052 (.0157)	.0035 (.1275)	-.0079 (.6912)
union membership	.0384 (.1958)	.0323 (.2800)	.0684 (.0176)
male	.0805 (.0107)	.0840 (.0087)	.0923 (.0017)
looks	.0123 (.5845)	.0142 (.5332)	-.0034 (.8764)
Intercept	.3182 (.0037)	.5911 (.0000)	.6951 (.0000)
Adjusted R ²	.50	.49	.53

^a All time-variant variables are lagged

^b Unstandardized regression coefficients, *P* values appear in parentheses

Table 7.4 Determinants of hourly wage, panel samples
Dependent Variable: Log(hourly wage)

Variable ^a	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
log hourly wages	.4856 (.0000) ^b	.5443 (.0000)	.5238 (.0000)
education	.0276 (.0000)	.0221 (.0006)	.0143 (.0051)
experience	.0014 (.7436)	.0040 (.3574)	-.0006 (.8856)
experience ²	-.00004 (.6180)	.0001 (.2462)	-.000004 (.9674)
tenure	.0053 (.0163)	.0021 (.3685)	-.0011 (.5847)
union	.0483 (.1200)	.0267 (.3979)	.0590 (.0918)
public sector ^c	----	----	.0597 (.1583)
supervision	-.0345 (.3181)	-.0130 (.7160)	.0060 (.8712)
male	.0851 (.0180)	.0526 (.1467)	.0754 (.0213)
married	.0682 (.0560)	.0682 (.0579)	.0787 (.0195)
foreign born	-.0324 (.3904)	-.0542 (.1561)	-.0391 (.2627)
professionals	.1455 (.0404)	.0708 (.3226)	.1931 (.0056)
technicians	.1956 (.0058)	.0990 (.1633)	.1520 (.0188)
managers	.2661 (.0003)	.1296 (.0796)	.3148 (.0000)
supervisors	.0069 (.9209)	-.0811 (.2497)	.0840 (.1779)
skilled services	.1422 (.0377)	.0240 (.7331)	.1184 (.0592)
craftsmen	.0703 (.1910)	.0161 (.7665)	.1075 (.0538)
semi-skilled services	-.0106 (.8509)	.0240 (.7331)	.0257 (.6479)
firm size (50+) ^c	----	----	.0554 (.1194)
Atlantic	-.0709 (.1961)	-.0069 (.9004)	-.0820 (.1171)
Quebec	-.0251 (.4789)	.0759 (.0363)	.0561 (.0958)
Prairies	-.0417 (.3822)	.0253 (.5958)	-.0092 (.8349)
B.C.	.0412 (.4438)	.0472 (.4019)	.0361 (.4624)
above average	-.0196 (.5246)	-.0072 (.8170)	.0056 (.8463)
below average	-.0645 (.2934)	-.0794 (.1894)	.0469 (.4151)
Intercept	.5029 (.0000)	.6395 (.0000)	.7312 (.0000)
Adjusted R ²	.53	.51	.54

^a All time-variant variables are lagged

^b Unstandardized regression coefficients, *P* values appear in parentheses

^c Not available in 1977

Table 7.5 Determinants of hourly wage, panel samples
Dependent Variable: Log(hourly wage)

Variable ^a	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
log hourly wages	.4839 (.0000) ^b	.5436 (.0000)	.5236 (.0000)
education	.0276 (.0000)	.0221 (.0006)	.0143 (.0051)
experience	.0017 (.6870)	.0042 (.3199)	-.0007 (.8731)
experience ²	-.00005 (.5623)	-.0001 (.2205)	-.000004 (.9628)
tenure	.0052 (.0166)	.0020 (.3753)	-.0010 (.6043)
union	.0489 (.1156)	.0271 (.3902)	.0578 (.0983)
public sector ^c	----	----	.0597 (.1580)
supervision	-.3599 (.3046)	-.0141 (.6927)	.0058 (.8760)
male	.0852 (.0179)	.0545 (.1323)	.0751 (.0217)
married	.0715 (.0445)	.0704 (.0498))	.0778 (.0209)
foreign born	-.0335 (.3731)	-.0552 (.1482)	-.0383 (.2719)
professionals	.1477 (.0375)	.0731 (.3070)	.1948 (.0052)
technicians	.1986 (.0051)	.1014 (.1531)	.1513 (.0192)
managers	.2654 (.0003)	.1271 (.0861)	.3176 (.0000)
supervisors	.0096 (.8903)	-.0784 (.2655)	.0825 (.1861)
skilled services	.1453 (.0336)	.0287 (.6838)	.1191 (.0574)
craftsmen	.0711 (.1863)	.0162 (.7661)	.1078 (.0530)
semi-skilled services	-.0124 (.8265)	-.0774 (.2021)	.0250 (.6560)
firm size (50+) ^c	----	----	.0556 (.1178)
Atlantic	-.0695 (.2048)	-.0042 (.9388)	-.0808 (.1219)
Quebec	-.0241 (.4977)	.0777 (.0324)	.0559 (.0965)
Prairies	-.0379 (.4268)	.0290 (.5433)	-.0082 (.8527)
B.C.	.0439 (.4142)	.0488 (.3859)	.0364 (.4592)
looks	.0035 (.8772)	.0150 (.5126)	-.0038 (.8622)
Intercept	.4785 (.0003)	.5762 (.0000)	.7501 (.0000)
Adjusted R ²	.53	.51	.54

^a All time-variant variables are lagged

^b Unstandardized regression coefficients, *P* values appear in parentheses

^c Not available in 1977

The physical attractiveness variables not only failed to reach statistical significance in any of the models specified but also produced a pattern of coefficients that were inconsistent and for all practical purposes, uninterpretable. The estimated coefficients presented in columns (i) and (ii) of Table 7.4 suggested, for example, that both above average and below average workers received wage growth penalties relative to average looking workers while the reversed trend was true for the estimates presented in column (iii) of the same table. The estimates presented in Table 7.5 ('looks' measured on ordinal level) indicated that the effect of physical attractiveness on wage growth was either negligible or nonexistent.

MANCOVA approach

The results presented in Table 7.7 and Figure 1(P) as well as the overall summary displayed in Table 7.8 were based on the MANCOVA and modified regression approach to test the hypothesis no. 1 in the panel data. It is important to note that the MANCOVA approach, unlike the OLS regression, can accommodate the within subjects effects in the model specifications. However, because of the added complexity (i.e., *within* and *between* subjects interactions) and inability to make direct comparisons with the cross-sectional models estimated earlier, we elected to treat all the time-variant effects including lagged wages as covariates.

The unadjusted deviations from the grand mean (Table 7.7) indicated that the above average rated workers received pay growth premia ranging from +4.7% to +6.6%, average rated workers received pay growth penalties ranging from -1.7 to -2.9% while those rated as below average had wages ranging from +2.0% to -24.6% relative to the unadjusted grand mean. Furthermore, these

unadjusted differences reached statistical significance in two of the three models specified. These pay premia and penalties based on looks largely disappeared once controls, including lagged wages, were introduced. While none of these effects was statistically significant, there was some indication that the effect of looks on wage growth was near-zero for the 'above average' and 'average' rated workers but that it might had a stronger, and possible negative, effect on the wage growth for the 'below average' workers.

Table 7.7 Adjusted and unadjusted effects of physical attractiveness ratings on log(hourly wages)^a: panel samples

Attractiveness ratings	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average	-4.5% (-22.0%) ^b	-6.4% (-24.6%)	+4.3% (+2.0%)
Average	+1.2% (-1.8%)	+0.8% (-1.7%)	-0.5% (-2.9%)
Above average	-0.8% (+6.2%)	0.0% (+6.6%)	+0.1% (+4.7%)
<i>P value</i>	0.570 (0.004)	0.497 (0.001)	0.711 (0.193)

^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence

^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses

The second set of results was based on the unstandardized regression coefficients (β - slopes) for the lagged effect of physical attractiveness ratings measured on a 3-point Likert type scale (Table 7.8), before and after adjusting for all time-variant controls. As indicated elsewhere, these estimates provided a more direct and interpretable test of the hypothesized (linear) relationship

Figure 1(P) Adjusted and unadjusted effects of physical attractiveness ratings on log(hourly wages): panel estimates

Figure 1 (i)

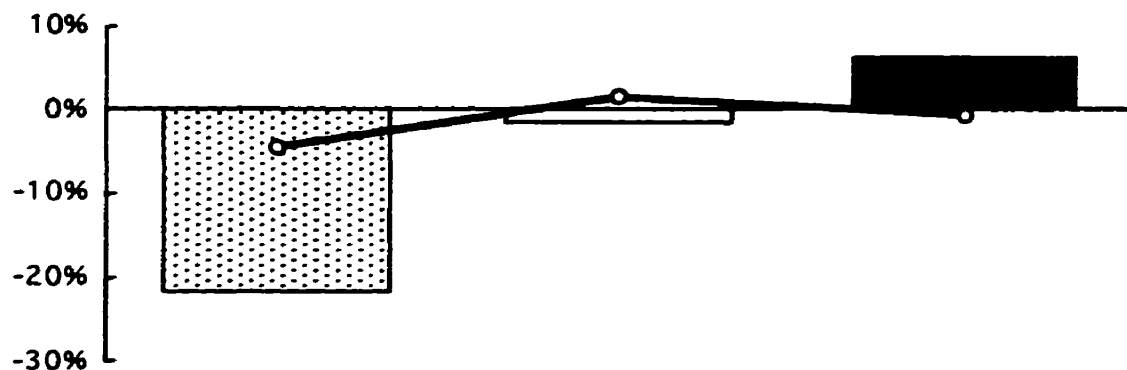


Figure 1 (ii)

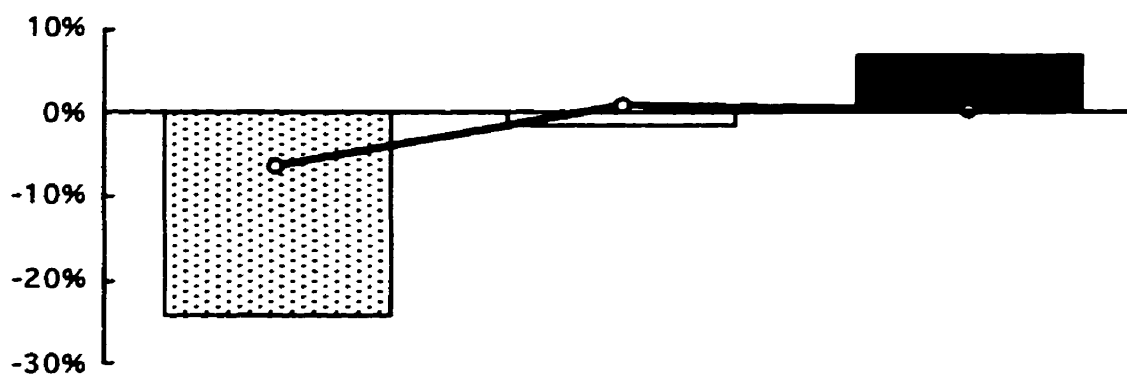
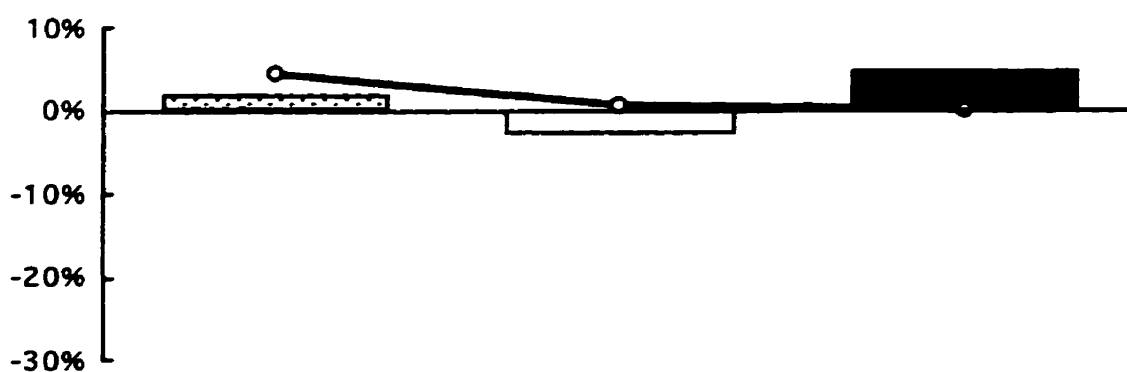


Figure 1 (iii)



Below average Average Above average Adjusted effects

0% = GRAND MEAN

between physical attractiveness and wage growth, especially once interactive effects were involved. The effect of attractiveness on hourly wage growth ranged from +4.6% to 11.9% for a one-unit change in the attractiveness ratings before adjusting for controls (β_{looks}) and these effects were statistically significant in two of the three panel specifications. The inclusion of control variables had considerable impact on the physical attractiveness estimates in panel samples. The adjusted effects very small and they failed to reach statistical significance in any of the models specified. The adjusted effects of attractiveness on wage growth ranged from -0.7% to +1.1% for a one-unit change in the attractiveness ratings.

While the unadjusted effects appeared to lend some support to the hypothesized relationship between physical attractiveness and wage growth, most of the adjusted effects tended to be near-zero. Wages of the below average workers grew at a slower rate relative to the grand mean in two of the models [column (i) and (ii)] and at a faster rate in the third model [column (iii)]. It is important to point out, however, that the similarities between estimates presented in the first two columns of Table 7.7 [Figure 1(P)] are somewhat artificial as both models regressed $\log(\text{hourly wages})$ in 1979 and 1981 on an identical set of predictors assessed in the 1977 wave of the CQL survey. This qualification applies to all panel models that were estimated in our study.

Overall, there was little evidence that attractiveness played an important role in wage growth specifications estimated in panel models, especially once controls were introduced. Nevertheless, caution is needed in drawing any firm conclusions from this apparent 'disappearance' of attractiveness effects. As indicated elsewhere, the wage growth specifications represent a much more

severe test of our hypotheses than those estimated in cross-sectional models. This is exemplified by the fact that other powerful and well established predictors of earnings also failed to generate statistically significant coefficients in the wage growth models. This is probably because the years are too close together and the sample sizes far too small. Finally, we should keep in mind that only slightly above 50% of the respondents received identical physical attractiveness ratings in any two waves of the CQL survey.

Table 7.8 Summary: hypothesis no. 1					
Unadjusted and adjusted unstandardized regression coefficients and significance tests for the effects of attractiveness (looks) on log(hourly wages)					
Panel samples					
	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H ₀
<i>Unadjusted effects</i> H ₀ : β _{looks} = 0 H _a : β _{looks} > 0					(5 of 6)
Direction (β)	+.109 ✓	+.119 ✓	+.046 ✓	3 of 3	YES
Significance (p)	.002 ✓	.001 ✓	.185 ✗	2 of 3	
<i>Adjusted effects^a</i> H ₀ : β _{looks} = 0 H _a : β _{looks} > 0					(1 of 6)
Direction (β)	-.002 ✗	+.011 ✓	-.007 ✗	1 of 3	NO
Significance (p)	.946 ✗	.657 ✗	.761 ✗	0 of 3	
^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence					

The issue of reverse causality was also addressed in the studies conducted by Roszell et al. (1989) and Hamermesh and Biddle (1994). It is

important to note, however, that all but one of the models specified by Hamermesh and Biddle (1994) were based on cross-sectional samples. The one model that was based on panel data regressed the 1981 wages on the lagged ratings of physical attractiveness (i.e., average of the 1977 and 1979 ratings) but it did not control for lagged wages. Furthermore, the remaining time-variant human capital variables used were from the 1981 data set. They reported significant effects for looks that were similar to those presented in Table 7.2. The study by Roszell et al. (1989) utilized only one of the data sets similar to the ones used in the present study [i.e., 1979/81: Table 7.3, columns (iii) and (vi)]. But, as indicated earlier, although they controlled for lagged effects of looks and income, they utilized different operationalization of key variables (i.e., incomes rather than earnings) and introduced a fairly modest number of controls that were all measured in the 1981 wave of the CQL survey. Because of these differences their results are not directly comparable with those reported here. However, it is also quite clear that the introduction of additional controls in this study inevitably results in reducing the effects on wage profiles attributable to the physical attractiveness ratings.

Summary

In all three panel samples the unadjusted effects of looks on wage profiles were consistent with our predictions suggesting that pay premia and penalties associated with physical attractiveness were plausible. However, once additional controls were introduced and especially lagged wages these effects were near-zero. Overall, these results provided limited support for hypothesis no. 1 tested in panel samples.

It is important to stress from the outset that the absence of the 'main effects' of the attractiveness variables on wage growth in the adjusted models does not preclude that looks are relevant in this process. The implication of effect modification is that the relationship between physical attractiveness ratings and wage growth differs, depending on other characteristics such as workers' gender, union membership or job tenure. It is plausible, therefore, to argue that physical attractiveness might be a relevant predictor of wage growth when conditioned by other individual or institutional level factors.

Panel Results: Hypothesis no. 2

The effect of attractiveness on wage growth, all else being equal, should be higher for male than for female workers.

Table 7.9 and Figure 2(p) show the results of specifications designed to test whether wage growth associated with physical attractiveness were uniform for the two genders. These specifications were identical to those estimated in cross-sectional samples but utilizing lagged effects for all time-variant predictors including previous wages in the adjusted models. The relevance of both physical attractiveness ratings and gender were quite evident in the unadjusted models as was the absence of any significant interactions between the two. The unadjusted deviations from the grand mean [i.e., bars in Figure 2(p)] clearly replicated the now familiar pattern of differential wage growth based on attractiveness. The only deviation from it was to be found for the 'below average' females in the 1979/81 model [Figure 2(p) (iii)].

Table 7.10 Adjusted and unadjusted effects of physical attractiveness ratings and gender on log(hourly wages)^a: panel samples

Attractiveness and gender	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
Male	-1.8% (-13.8%) ^b	-1.8% (-11.5%)	+2.6% (+7.6%)
Female	-10.0% (-38.9%)	-14.1% (-44.7%)	+7.7% (-6.4%)
Average			
Male	+5.4% (+7.6%)	+3.1% (+6.1%)	+1.8% (+7.5%)
Female	-6.7% (-19.5%)	-3.3% (-17.0%)	-3.6% (-17.4%)
Above average			
Male	+0.6% (+12.6%)	+2.0% (+15.7%)	+5.7% (+19.3%)
Female	-4.1% (-4.2%)	-3.9% (-7.4%)	-6.9% (-12.3%)
<i>P values</i>			
Looks	0.717 (0.001)	0.458 (0.000)	0.589 (0.113)
Gender	0.090 (0.000)	0.090 (0.000)	0.347 (0.000)
Looks X Gender	0.496 (0.491)	0.880 (0.824)	0.250 (0.513)
^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

While the unadjusted effects seemed to support the relevance of looks in wage growth profiles regardless of the workers' gender, they tended to be much smaller or disappeared altogether once adjustments for the covariates were made. There was a near significant trend in two of the panel models ($p=0.09$) for the overall wages of males to grow at a slightly faster rate than those of female workers (from +1.8 to +3.0% vs. from -2.4% to -5.4%). None of the effects for looks or its interaction with gender was significant. Furthermore, the overall

Figure 2(p) Adjusted and unadjusted effects of physical attractiveness ratings and gender on log(hourly wages): panel estimates

Figure 2 (i)

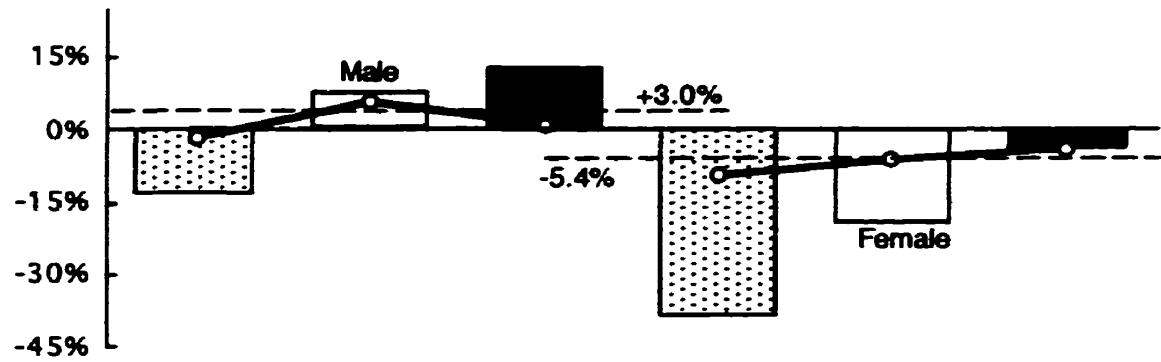


Figure 2 (ii)

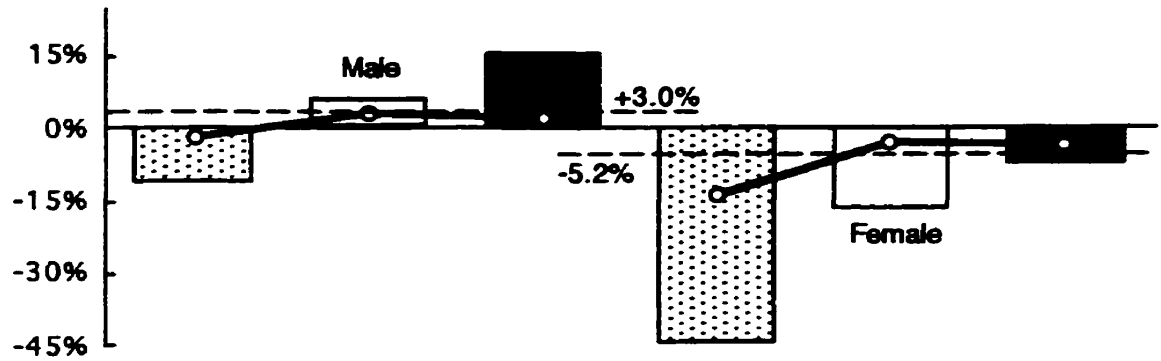
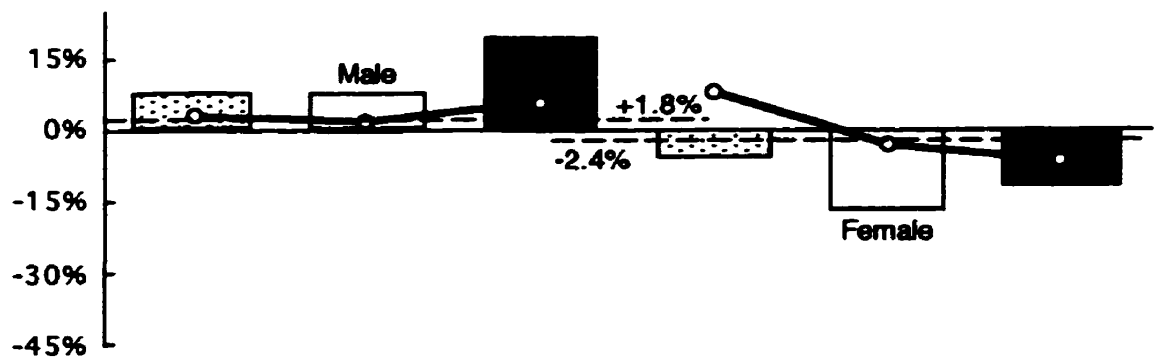


Figure 2 (iii)



Below average Average Above average Adjusted Group means
0% = GRAND MEAN

pattern of effects provided little support for the hypothesis that attractive males -- or for that matter any other combination of gender and attractiveness -- experienced faster wage growth. There was some indication that the wages of below average workers (both males and females) tended to grow at a slightly slower pace but this finding was contradicted by faster wage growth for female workers presented in column (iii) and Figure 2(p): (iii).

The second set of results was based on the unstandardized regression coefficients (β - slopes) for the effect of physical attractiveness ratings measured on a 3-point Likert type scale and estimated separately *within* each gender (Table 7.10). These estimates generally confirmed our earlier results. The effect of attractiveness on hourly wage growth for male workers ranged from +8.8% to +9.1% and from +1.6% to +16.2 % for female workers for a one-unit change in the attractiveness ratings before adjusting for controls [$\beta_{(M)}$ and $\beta_{(F)}$, respectively]. While these effects were larger for females than for males in two of the models, there was no indication that this difference was statistically significant. The inclusion of control variables reduced the impact of the physical attractiveness on wage growth to near-zero levels for five of the six coefficients. The one exception -- and potentially a chance finding -- was the effect of looks on wage growth for female workers in the 1979/81 model which suggested a negative effect of around -9.1% for a one-unit change in the attractiveness ratings for this subgroup.

Table 7.10 Summary: hypothesis no. 2 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and gender (M = 'Males'; F = 'Females') on log(hourly wages) Panel samples					
	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H_0
Unadjusted effects $H_0: \beta(M) = \beta(F)$ $H_a: \beta(M) > \beta(F)$ Direction (Δ) ¹ Significance (p) ²	$\beta(M) = +.091$ $\beta(F) = +.162$ -.071 ✗ .314 ✗	$\beta(M) = +.116$ $\beta(F) = +.143$ -.027 ✗ .685 ✗	$\beta(M) = +.088$ $\beta(F) = +.016$ +.072 ✓ .280 ✗	1 of 3 0 of 3	(1 of 6) NO
Adjusted effects³ $H_0: \beta(M) = \beta(F)$ $H_a: \beta(M) > \beta(F)$ Direction (Δ) ¹ Significance (p) ²	$\beta(M) = -.002$ $\beta(F) = -.002$.000 ✗ .366 ✗	$\beta(M) = +.001$ $\beta(F) = +.001$.000 ✗ .697 ✗	$\beta(M) = -.001$ $\beta(F) = -.091$ -.081 ✗ .110 ✗	0 of 3 0 of 3	(0 of 6) NO
¹ $\Delta (\beta_M - \beta_F)$ ² F-ratio to test the increment in the R^2 ($\beta_3 \times \text{looks} \times \text{gender}$) ³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence					

Summary

The effect of looks on wage growth was not modified by worker's gender. Overall, these results provided no support for hypothesis no. 2 tested in panel samples.

Panel Results: Hypothesis no. 3

The effect of attractiveness on wage growth, all else being equal, should be faster for Canadian-born than for foreign-born workers.

Table 7.11 and Figure 3(p) present the results of these specifications in the panel samples. The effects of country of birth on wage profiles were small, non-significant and inconsistent both in the unadjusted and adjusted specifications. Two of the figures presenting the unadjusted deviations from the grand mean [Figure 3(p): (i) and (ii)] suggested that the effects of looks on wage growth were almost identical for the Canadian- and the foreign-born workers. The third model deviated somewhat from that pattern and it suggested that the 'average' rated workers might be at a greater disadvantage as far as wage growth was concerned. However, none of the interactive effects either before or after adjusting for covariates reached statistical significance. The adjusted effects were more difficult to interpret as they produced a pattern of results that was not only quite unexpected but also different in each panel. Once again, there were no statistically significant interactions in any of the adjusted models that were specified.

The second set of results was based on the unstandardized regression coefficients estimated separately for the Canadian- and foreign-born workers [$\beta_{(C)}$ and $\beta_{(F)}$, respectively]. The effect of attractiveness on hourly wage growth for the Canadian-born workers ranged from -0.5% to +3.5% (unadjusted effects: from +4.9% to +10.6%) and from -2.3% to -5.4% (unadjusted effects: from +3.3% to +16.9%) for the foreign-born workers for a one-unit change in the attractiveness ratings. While three of the adjusted effects (Table 7.12) produced

the expected signs, there was little evidence to suggest that the effect of looks on wage growth was significantly different based on the worker's country of birth.

Table 7.11 Adjusted and unadjusted effects of physical attractiveness ratings and country of birth on log(hourly wages)^a: panel samples			
Attractiveness and country of birth	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
Canadian born	-6.3% (-22.4%) ^b	-12.6% (-28.0%)	+7.1% (+1.5%)
Foreign born	-2.2% (-21.2%)	+3.5% (-18.4%)	-5.2% (+3.9%)
Average			
Canadian born	+0.7% (-2.4%)	+2.0% (+0.3%)	-0.1% (-2.8%)
Foreign born	+2.3% (+0.4%)	-4.2% (-8.8%)	-1.7% (-3.4%)
Above average			
Canadian born	+0.8% (+5.8%)	+0.8% (+5.5%)	+1.3% (+5.0%)
Foreign born	-8.6% (+8.5%)	-3.4% (+12.0%)	-4.3% (+3.6%)
P values			
Looks	0.310 (0.011)	0.864 (0.002)	0.940 (0.351)
Country of birth	0.809 (0.739)	0.707 (0.732)	0.199 (0.987)
Looks X Country of birth	0.316 (0.996)	0.221 (0.272)	0.681 (0.983)
^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, firm size (79/81), and dummy variables measuring occupation and region/province of residence			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

Figure 3(p) Adjusted and unadjusted effects of physical attractiveness ratings and country of birth on log(hourly wages): panel estimates

Figure 3 (i)

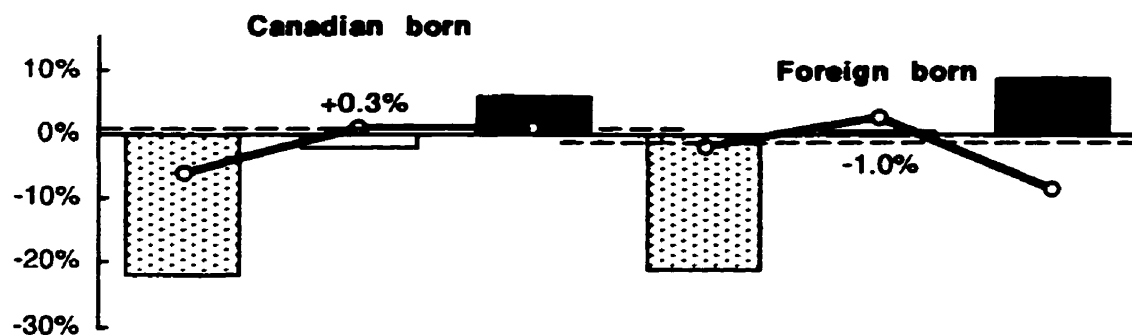


Figure 3 (ii)

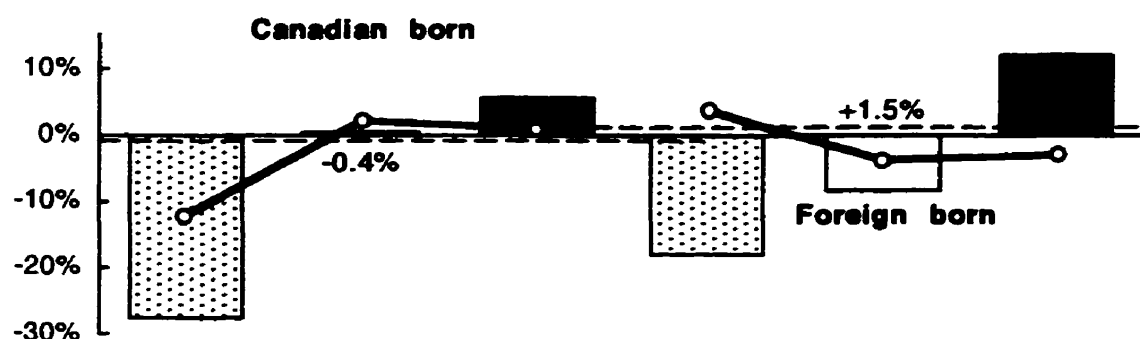
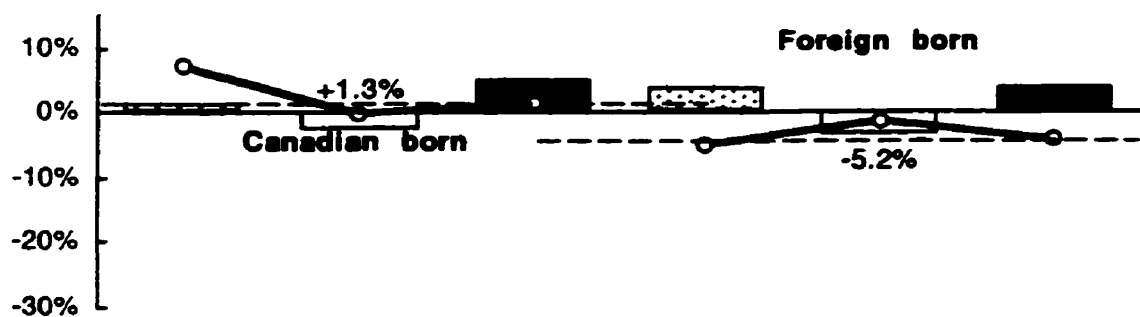


Figure 3 (iii)



Below average
 Average
 Above average
 Adjusted
 - - - Group means
0% = GRAND MEAN

Table 7.12 Summary: hypothesis no. 3					
Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and country of birth (C = 'Canadian born', F = 'Foreign born') on log(hourly wages): Panel samples					
	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H ₀
<i>Unadjusted effects</i>					
H ₀ : β(C) = β(F)	β(C) = +.106	β(C) = +.102	β(C) = +.049		(1 of 6) NO
H _a : β(C) > β(F)	β(F) = +.125	β(F) = +.169	β(F) = +.033		
Direction (Δ) ¹	-.019 ✗	-.067 ✗	-.016 ✓	1 of 3	
Significance (p) ²	.816 ✗	.413 ✗	.846 ✗	0 of 3	
<i>Adjusted effects³</i>					
H ₀ : β(C) = β(F)	β(C) = +.023	β(C) = +.035	β(C) = -.005		(3 of 6) ?
H _a : β(C) > β(F)	β(F) = -.054	β(F) = -.036	β(F) = -.023		
Direction (Δ) ¹	+.077 ✓	+.071 ✓	+.018 ✓	3 of 3	
Significance (p) ²	.226 ✗	.484 ✗	.915 ✗	0 of 3	
¹ Δ (βC - βF)					
² F-ratio to test the increment in the R ² (β3 XlooksXCountry of birth)					
³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, firm size (79/81), and dummy variables measuring occupation and region/province of residence					

Summary

The effect of looks on wages was not modified by worker's country of birth. Overall, these results provided no support for hypothesis no. 3 tested in panel samples.

Panel Results: Hypothesis no. 4

The effect of attractiveness on wage growth, all else being equal, should yield faster returns as the amount of labour force experience increases.

The effect of labour force experience on wage growth was not significant neither before nor after adjusting for controls. However, the overall experience-wage growth profiles followed our expectations in two of the three models. That is, the impact of experience on wage growth relative to the adjusted grand mean, was lowest for workers who had less experience and it tended to increase as the amount of accumulated experience increased. This trend did not hold as far as the 1979/81 panel data was concerned. In the 1979/81 model the effect of experience on wage growth was the highest for workers who accumulated less than 10 years of labour force experience (+3.7%) and it was small and negative for the remaining two levels of experience (-1.3% and -1.5%, respectively). The effect of looks on wage growth was significant and following the similar pattern of increased returns associated with attractiveness in two of the unadjusted specifications. These effects largely disappeared once controls were introduced. There was one statistically significant interaction in the adjusted models suggesting [Table 7.13, column (iii)] that the effect of looks on wage growth might be conditioned by the amount of labour force experience. More specifically, this interaction suggested that the effect of looks on wage growth was largely negative at the lower levels of experience ('≤10 years' and '11-25 years') and positive at the 'high' values of labour force experience. It is difficult to conclude whether this significant interaction was due to chance or not. This is because this trend appeared to hold equally well for 'average' and 'above average' workers

and thus could not be accounted for strictly in terms of sparsely populated cells for the 'below average' category.

Table 7.13 Adjusted and unadjusted effects of physical attractiveness ratings and labour force experience on log(hourly wages)^a: panel samples			
Attractiveness and experience	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
≤ 10 years	-19.8% (-39.1%) ^b	-14.3% (-36.2%)	+18.6% (+7.8%)
11 - 25 years	-13.3% (-25.5%)	-16.8% (-19.8%)	+7.4% (+7.7%)
≥ 26 years	+6.1% (-12.9%)	+4.9% (-20.3%)	-8.6% (-8.5%)
Average			
≤ 10 years	+3.0% (+1.6%)	-2.2% (-0.3%)	+1.3% (-2.3%)
11 - 25 years	+1.8% (+0.6%)	+0.8% (+2.6%)	-0.2% (+1.7%)
≥ 26 years	-0.8% (-6.7%)	+4.3% (-7.0%)	-1.7% (-7.8%)
Above average			
≤ 10 years	-5.0% (+1.6%)	-5.4% (+4.9%)	-2.7% (+0.3%)
11 - 25 years	+1.4% (+12.4%)	-0.3% (+10.8%)	-5.0% (+3.2%)
≥ 26 years	+2.0% (+4.7%)	+6.4% (+3.0%)	+12.1% (+12.9%)
P values			
Looks	0.267 (0.002)	0.312 (0.002)	0.558 (0.153)
Experience	0.515 (0.600)	0.288 (0.573)	0.663 (0.750)
Looks X Experience	0.211 (0.415)	0.758 (0.853)	0.014 (0.316)
^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

Figure 4(p) Adjusted and unadjusted effects of physical attractiveness ratings and labour force experience on log(hourly wages): panel estimates

Figure 4 (i)

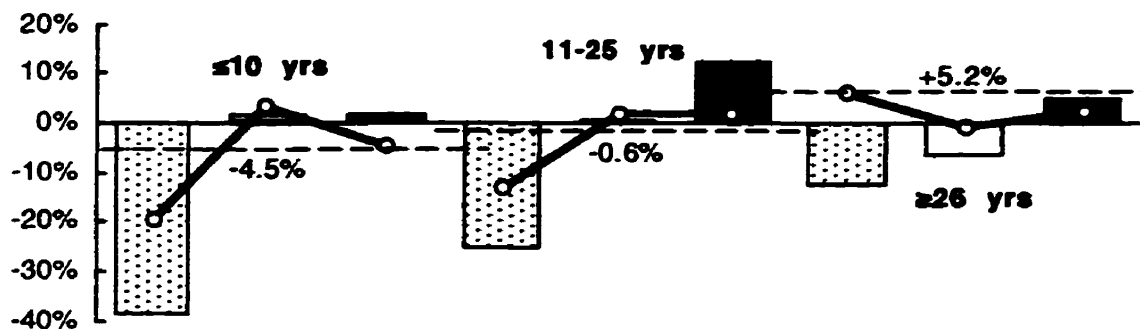


Figure 4 (ii)

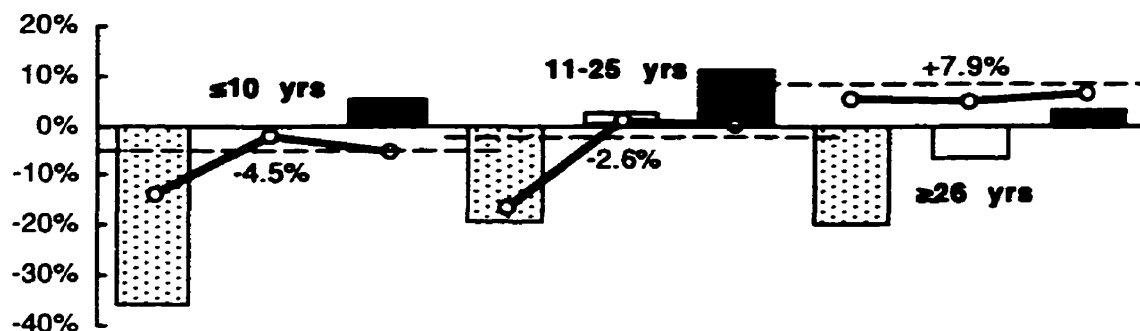
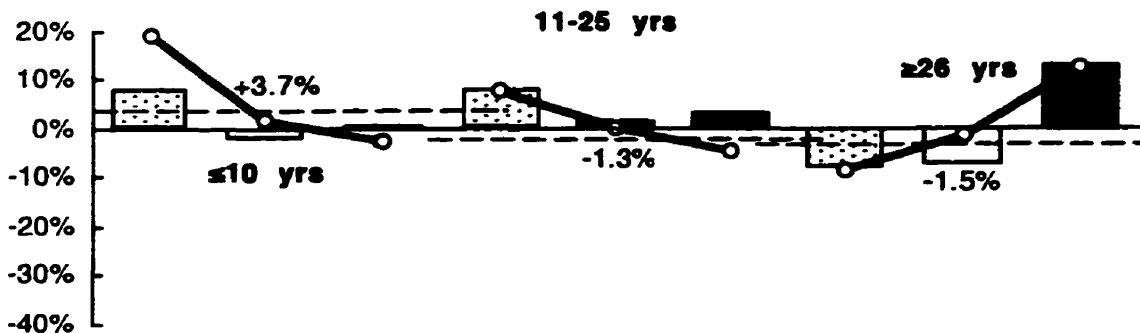


Figure 4 (iii)



[Dotted Box] Below average [White Box] Average [Solid Black Box] Above average [Line with Circle] Adjusted [Dashed Line] Group means
 0% = GRAND MEAN

The second set of results was based on the unstandardized regression coefficients estimated separately *within* each level of labour force experience. The effect of attractiveness on hourly wage growth differed considerably between the unadjusted and adjusted estimates and across different panels. The first two unadjusted panel estimates suggested that the effects of attractiveness were positive and fairly homogenous across different levels of experience. The third panel suggested that the attractiveness provided no clear advantage with respect to wage growth unless the individual in question accumulated more than 26 years of labour force experience. Furthermore, this interaction effect was statistically significant at $p=0.003$ after adjusting for covariates. In the remaining two adjusted models the effect of attractiveness was highest for those workers who had between 11 and 25 years of experience and they ranged from (β_2) +2.9% to +6.2% for a one-unit change in the attractiveness ratings after adjusting for controls.

Overall, the results of panel specifications generally failed to produce any conclusive evidence to support this hypothesis. While the results from the 1979/81 panel were both intriguing and somewhat supportive of the hypothesized relationship, the fact that two other panels failed to replicate them suggested that the probability that this was a chance finding was high.

Table 7.14 Summary: hypothesis no. 4

Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and labour force experience (1 = '≤10 yrs', 2 = '11-25 yrs', 3 = '≥ 25 yrs') on log(hourly wages): Panel samples

	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H ₀
Unadjusted effects H ₀ : $\beta_1 = \beta_2 = \beta_3$ H _a : $\beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta_{(1)} = +.073$ $\beta_{(2)} = +.145$ $\beta_{(3)} = +.097$ 1 < 2 < 3 ✗ .664 ✗	$\beta_{(1)} = +.118$ $\beta_{(2)} = +.108$ $\beta_{(3)} = +.112$ 1 > 2 < 3 ✗ .888 ✗	$\beta_{(1)} = -.003$ $\beta_{(2)} = -.003$ $\beta_{(3)} = +.154$ 1 < 2 < 3 ✓ .316 ✗	1 of 3 0 of 3	(1 of 6) NO
Adjusted effects³ H ₀ : $\beta_1 = \beta_2 = \beta_3$ H _a : $\beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta_{(1)} = -.003$ $\beta_{(2)} = +.062$ $\beta_{(3)} = -.000$ 1 < 2 < 3 ✗ .899 ✗	$\beta_{(1)} = +.013$ $\beta_{(2)} = +.029$ $\beta_{(3)} = -.009$ 1 < 2 < 3 ✗ .284 ✗	$\beta_{(1)} = -.052$ $\beta_{(2)} = -.045$ $\beta_{(3)} = +.131$ 1 < 2 < 3 ✓ .003 ✓	1 of 3 1 of 3	(2 of 6) NO?
¹ $\beta_1 < \beta_2 < \beta_3$ ² F-ratio to test the increment in the R ² ($\beta_3 \times \text{looks} \times \text{experience}$) ³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence					

Summary

The effect of looks on wages was not modified by worker's labour force experience. Overall, these results provided no support for hypothesis no. 4 tested in panel samples.

Panel Results: Hypothesis no. 5

The effect of attractiveness on wage profiles, all else being equal, should be higher when explicit information about competence or productivity is more difficult to directly observe. Conversely, in those settings where direct assessments of productivity are easier or less difficult to carry out, the effects of physical attractiveness on wage growth should be lower.

The concept of difficulty in terms of direct assessments of productivity was operationalized, as in our earlier cross-sectional analyses, by whether the respondent worked in a firm with 50 or more employees or not. However, this variable was not available in the 1977 wave of the CQL survey, hence we were able to test this hypothesis in only one of our panel samples (i.e., 1979/1981). Overall, firm size was not significantly associated with wage growth differentials (+0.4% vs. -0.2%). There was also no indication that these effects might be mitigated by worker's level of attractiveness before or after adjusting for covariates both in MANCOVA [Table 7.15 and Figure 5(p)] and in OLS specifications (Table 7.16).

Table 7.15 Adjusted and unadjusted effects of physical attractiveness ratings and firm size on log(hourly wages)^a: panel samples

Attractiveness and firm size	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
< 50 employees	----	----	+2.0% (+6.0%) ^b
> 50 employees	----	----	+1.9% (+1.8%)
Average			
< 50 employees	----	----	-5.0% (-1.6%)
> 50 employees	----	----	+0.7% (+1.9%)
Above average			
< 50 employees	----	----	+4.6% (-0.7%)
> 50 employees	----	----	+4.6% (+2.0%)
P values			
Looks	----	----	0.822 (0.305)
Firm size	----	----	0.878 (0.764)
Looks X Firm size	----	----	0.793 (0.793)
^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, and dummy variables measuring occupation and region/province of residence			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

The second set of results was based on the unstandardized regression coefficients estimated separately for those employed in smaller ($\beta_{<50}$) and larger ($\beta_{>50}$) firms before and after adjusting for controls. The effect of attractiveness on hourly wage growth was larger in firms employing less than 50 workers in 1979 data set (+5.7% versus +2.7%) but after adjusting for controls the coefficients for a one-unit change were much smaller and pointing in the opposite direction. Because the magnitude of that difference was very small there was no significant interaction effect involving looks and firm size.

Overall, these analyses provided no support for the hypothesized relationship between physical attractiveness, firm size and their conditional effect on wage profiles.

Figure 5(p) Adjusted and unadjusted effects of physical attractiveness ratings and firm size on log(hourly wages): panel estimates

Figure 5 (iii)

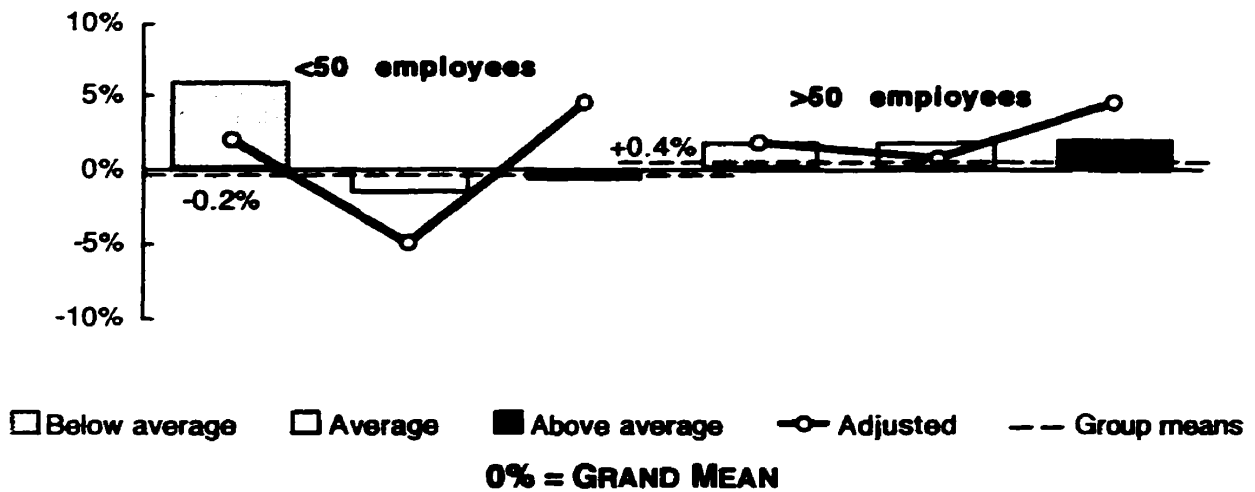


Table 7.16 Summary: hypothesis no. 5					
Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and firm size (<50 employees and >50 employees) on log(hourly wages): Panel samples					
	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H ₀
<i>Unadjusted effects</i>					
H ₀ : β _{<50} = β _{>50}	----	----	β _{<50} =+.057		(0 of 2) NO
H _a : β _{<50} < β _{>50}	----	----	β _{>50} =+.027		
Direction ¹	----	----	+.030 ✕	0 of 1	
Significance (p) ²	----	----	.673 ✕	0 of 1	
<i>Adjusted effects³</i>					
H ₀ : β _{<50} = β _{>50}	----	----	β _{<50} =-.009		(1 of 2) ?
H _a : β _{<50} < β _{>50}	----	----	β _{>50} =+.012		
Direction ¹	----	----	-.021 ✓	1 of 1	
Significance (p) ²	----	----	.831 ✕	0 of 1	

¹ Δ (β_{<50} - β_{>50})

² F-ratio to test the increment in the R² (β₃ XlooksXFirm size)

³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, and dummy variables measuring occupation and region/province of residence

Summary

The effect of looks on wages was not modified by worker's firm size. Overall, these results provided no support for hypothesis no. 5 tested in panel samples.

Hypothesis no. 6

The effect of attractiveness on wage growth, all else being equal, should be small or negligible in occupational categories such as 'unskilled' and 'technical' but that it should be larger for occupational categories such as 'service' and 'professional'.

In order to avoid sparsely occupied or empty cells only four occupational categories were used. Tables 7.17, 7.18 and Figure 6(p) present panel results of the effects of physical attractiveness on wage profiles as moderated by worker's occupational category. These specifications were designed to assess whether physical attractiveness might be of particular relevance in some occupations and thus responsible for differential wage growth. Relative to the grand mean, the log(hourly) wages of 'unskilled', 'service', and 'technical' workers tended to grow at a rate below the mean, while the 'professional' group had wage growth from +2.2% to +12.3% above the grand mean after adjustments for covariates were made. There was also some indication that there were significant differences in terms of wage profiles based on these occupational categories both in the unadjusted and adjusted specifications.

There were no statistically significant interactions between attractiveness and occupation both for unadjusted and adjusted effects. Furthermore, the overall pattern of these effects presented in Figure 6(p) and based on the unadjusted and adjusted deviations from the grand mean, appeared to be quite random thus further suggesting that the wage growth profiles were not affected by the worker's level of attractiveness. These findings were largely supported by the results based on the unstandardized regression coefficients estimated separately for each occupational category before and after adjusting for controls (Table 7.18).

Table 7.17 Adjusted and unadjusted effects of physical attractiveness ratings and occupation on log(hourly wages)^a: panel samples

Attractiveness and occupation	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
Unskilled	+3.9% (-17.5%) ^b	+5.9% (-21.7%)	-29.6% (-53.9%)
Technical	-15.6% (-24.2%)	-11.3% (-21.9%)	+2.5% (+2.0%)
Professional	+19.2% (+44.6%)	-17.8% (+0.2%)	+17.1% (+30.5%)
Service	-22.2% (-51.6%)	-8.7% (-42.8%)	+10.6% (-10.2%)
Average			
Unskilled	-13.6% (-37.6%)	-7.4% (-30.9%)	-9.6% (-34.1%)
Technical	+1.0% (+2.4%)	+2.2% (+1.4%)	-2.8% (-0.8%)
Professional	+8.1% (+34.3%)	+9.3% (+33.8%)	+11.8% (+40.9%)
Service	-3.3% (-20.6%)	-5.9% (-23.4%)	-5.0% (-24.6%)
Above average			
Unskilled	-12.2% (-25.7%)	+0.2% (-12.1%)	-14.2% (-35.8%)
Technical	-0.5% (+6.6%)	-0.6% (+2.5%)	+2.8% (+8.3%)
Professional	+6.3% (+39.5%)	+6.6% (+38.4%)	+11.6% (+38.8%)
Service	-5.4% (-18.1%)	-5.2% (-17.3%)	-8.0% (-24.2%)
P values			
Looks	0.939 (0.197)	0.488 (0.011)	0.949 (0.847)
Occupation	0.045 (0.000)	0.791 (0.000)	0.001 (0.000)
Looks X Occupation	0.431 (0.296)	0.607 (0.677)	0.543 (0.660)
^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring region/province of residence			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

Figure 6(p) Adjusted and unadjusted effects of physical attractiveness ratings and occupation on log(hourly wages): panel estimates

Figure 6 (i)

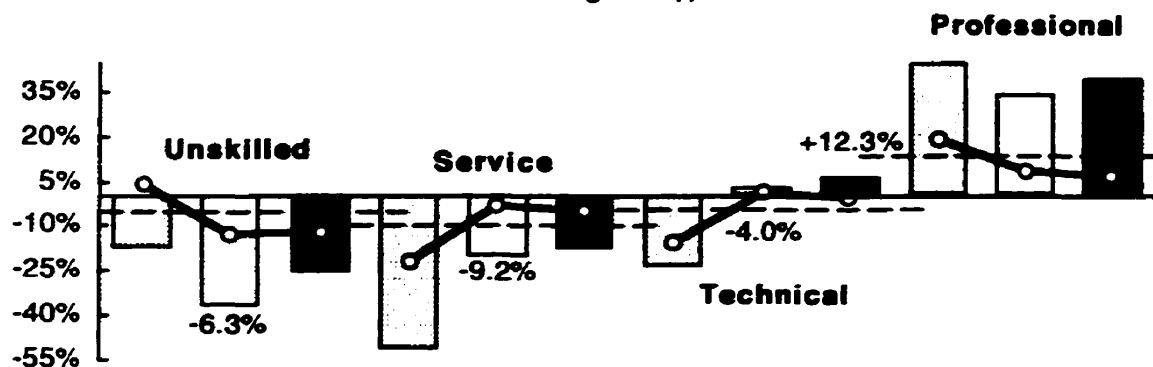


Figure 6 (ii)

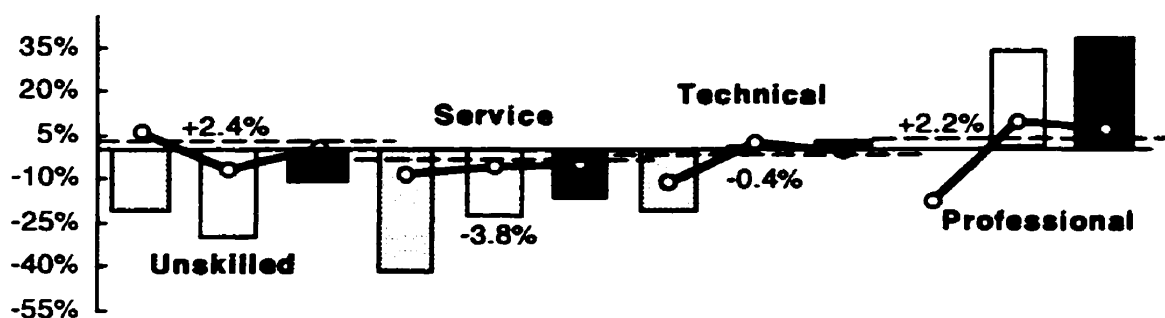
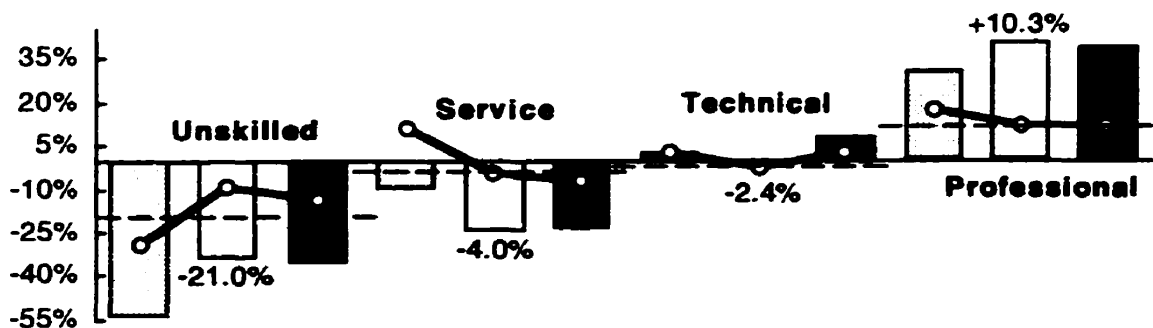


Figure 6 (iii)



□ Below average □ Average ■ Above average ○ Adjusted - - Group means
 0% = GRAND MEAN

The effect of attractiveness on hourly wage growth for 'service' workers ranged from -4.4% to +3.2% (unadjusted effects: from -3.1% to +9.2%), the effects for 'unskilled' workers ranged from -3.0% to +3.2% (unadjusted effects: from +2.2% to +10.1%), the effects for 'technical' category ranged from +1.9% to +4.6% (unadjusted effects: from +6.9% to +10.5%), and for 'professional' group from -3.1% to +1.5% (unadjusted effects: from +1.6% to +9.2%). There was also no indication that significant interaction effects were present.

Overall, the evidence generated from panel specifications with regard to this hypothesis ranged from weak to non-existent to non-interpretable. None of the interactive coefficients produced statistically significant results (even at $p < .10$) or patterns of result that were consistent with hypothesized effects. There was only one occupational category ('technicians') where looks were associated in all three adjusted estimates with faster wage growth. There was little support to indicate that looks might be associated with faster wage growth in those occupations where looks were hypothesized to enhance productivity.

Table 7.18 Summary: hypothesis no. 6

Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and occupation (u = 'unskilled', t = 'technical', p = 'professional', s = 'service') on log(hourly wages): Panel samples

	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H_0
Unadjusted effects $H_0: \beta_u = \beta_t = \beta_p = \beta_s$ $H_a: \beta_u < \beta_t < \beta_p < \beta_s$ Direction ¹ Significance (p) ²	$\beta_u = +.022$ $\beta_t = +.105$ $\beta_p = +.030$ $\beta_s = +.092$ $u < t < p < s$ X .691	$\beta_u = +.101$ $\beta_t = +.074$ $\beta_p = +.092$ $\beta_s = +.095$ $u < t < p < s$ X .636	$\beta_u = +.043$ $\beta_t = +.069$ $\beta_p = +.016$ $\beta_s = -.031$ $u > t > p > s$ X .583	0 of 3 0 of 3	(0 of 6) NO
Adjusted effects³ $H_0: \beta_u = \beta_t = \beta_p = \beta_s$ $H_a: \beta_u < \beta_t < \beta_p < \beta_s$ Direction ¹ Significance (p) ²	$\beta_u = -.039$ $\beta_t = +.046$ $\beta_p = -.031$ $\beta_s = +.032$ $u < t < p < s$ X .964	$\beta_u = +.032$ $\beta_t = +.019$ $\beta_p = +.015$ $\beta_s = +.022$ $u > t > p < s$ X .756	$\beta_u = +.012$ $\beta_t = +.038$ $\beta_p = -.020$ $\beta_s = -.044$ $u < t < p < s$ X .763	0 of 3 0 of 3	(0 of 6) NO
¹ $\beta_u < \beta_t < \beta_p < \beta_s$ ² F-ratio to test the increment in the R^2 ($\beta_3 \times \text{looks} \times \text{Occupation}$) ³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring region/province of residence					

Summary

The effect of looks on wages was not modified by worker's occupation. Overall, these results provide no support for hypothesis no. 6 tested in panel samples.

Panel Results: Hypothesis no. 7

The effect of attractiveness on wage growth, all else being equal, should be largely irrelevant for workers whose wages were set by collective bargaining but attractiveness should play a positive role on wage growth for those workers employed in the non-unionized settings.

There was some indication, especially in the unadjusted models, that workers employed in the unionized settings experienced faster wage growth than those who were non-unionized. Wages of the unionized workers grew from +3.4% to 4.7% faster relative to the grand mean while those employed in the non-unionized settings received wage growth penalties ranging from -2.4% to -2.9% after adjusting for covariates. Table 7.19 and Figure 7(p) show the results of these estimates expressed as deviations from the grand mean before and after adjusting for covariates. While none of the interactive terms attained statistical significance there was some evidence that looks might be somewhat more relevant to the wage profiles in the non-unionized settings.

The possibility that attractiveness might be somewhat less important in the unionized settings were also evident in the OLS estimates (Table 7.20). The unadjusted coefficients produced not only a pattern of coefficients that was consistent with our expectations but also resulted in statistically significant p values in two of the three estimates. Furthermore, the unadjusted effect of attractiveness on hourly wages for non-unionized workers in these two data sets was quite substantial (+16.8 and +16.6 vs. +3.4% and -5.5%). These differences as well as the relative importance of looks in either of these two settings tended to disappear or even change directions once controls were introduced.

Table 7.19 Adjusted and unadjusted effects of physical attractiveness ratings and union status on log(hourly wages)^a: panel samples

Attractiveness and union status	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
Non-unionized	-8.0% (-33.8%) ^b	-12.4% (-38.4%)	+1.9% (-4.7%)
Unionized	-0.1% (-7.4%)	+1.9% (-5.6%)	+7.6% (+17.7%)
Average			
Non-unionized	-1.7% (-8.4%)	+0.1% (-7.1%)	-3.3% (-11.4%)
Unionized	+5.1% (+7.1%)	+1.8% (+5.9%)	+4.1% (+9.5%)
Above average			
Non-unionized	-2.1% (+5.9%)	-1.7% (+4.8%)	-3.5% (+0.2%)
Unionized	+0.8% (+6.7%)	+2.3% (+9.4%)	+6.1% (+13.5%)
<i>P values</i>			
Looks	0.545 (0.008)	0.604 (0.003)	0.771 (0.175)
Union	0.194 (0.022)	0.139 (0.005)	0.100 (0.003)
Looks X Union	0.805 (0.146)	0.580 (0.230)	0.919 (0.662)

^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence

^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses

Figure 7(p) Adjusted and unadjusted effects of physical attractiveness ratings and union membership on log(hourly wages): panel estimates

Figure 7 (i)

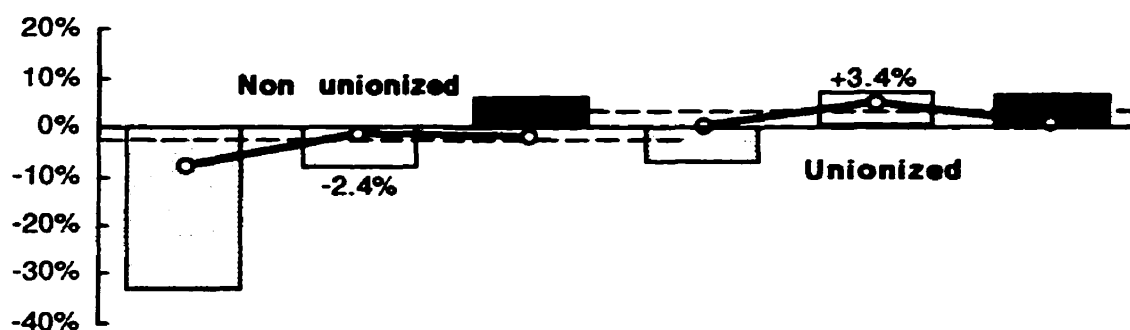


Figure 7 (ii)

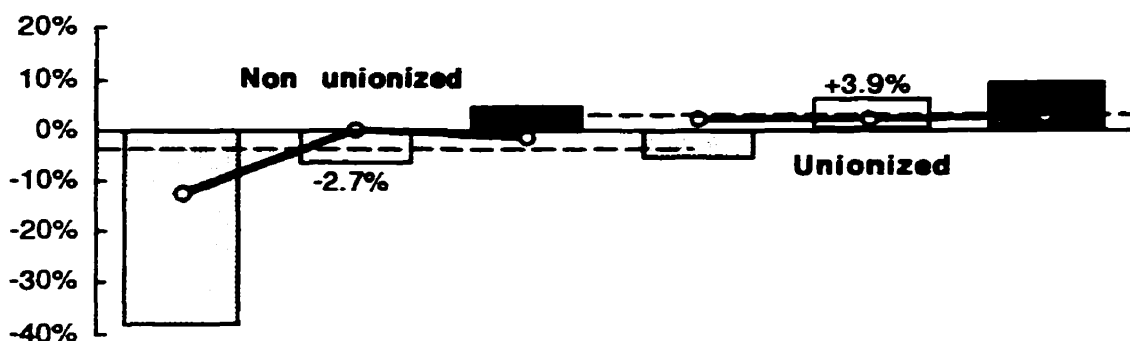
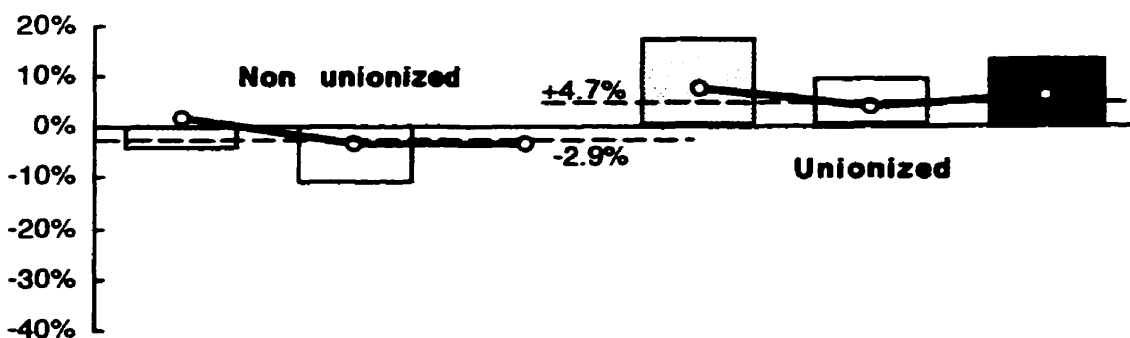


Figure 7 (iii)



□ Below average □ Average ■ Above average —○— Adjusted — — Group means
 0% = GRAND MEAN

Table 7.20 Summary: hypothesis no. 7					
Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and union status (nu = 'non unionized', u = 'unionized') on log(hourly wages): Panel samples					
	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H ₀
<i>Unadjusted effects</i>					
H ₀ : β _{nu} = β _u	β _{nu} =+.168	β _{nu} =+.166	β _{nu} =+.069		(5 of 6) YES
H _a : β _{nu} > β _u	β _u =+.034	β _u =-.055	β _u =+.014		
Direction ¹	+.134 ✓	+.111 ✓	+.055 ✓	3 of 3	
Significance (p) ²	.056 ✓	.100 ✓	.445 ✗	2 of 3	
<i>Adjusted effects³</i>					
H ₀ : β _{nu} = β _u	β _{nu} =-.001	β _{nu} =+.007	β _{nu} =-.017		(0 of 6) NO
H _a : β _{nu} > β _u	β _u =-.001	β _u =+.031	β _u =+.015		
Direction ¹	.000 ✗	-.024 ✗	-.032 ✗	0 of 3	
Significance (p) ²	.548 ✗	.786 ✗	.652 ✗	0 of 3	

¹ Δ(β_{nu} - β_u)

² F-ratio to test the increment in the R² (β₃ XlooksXUnion status)

³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence

Summary

The effect of looks on wages might be modified by whether wages are set by collective bargaining. Overall, these findings provided limited support for the hypothesized relationship between union membership and attractiveness and their conditional effect on wage profiles.

Panel Results: Hypothesis no. 8

The effect of attractiveness on wage growth, all else being equal, should yield faster returns as the amount of job tenure (years with the same employer) increases.

The panel specifications presented in Table 7.21 and Figure 8(p) provided indication that, indeed, wage growth profiles of workers who accumulated longer job tenures tended to be higher except in the 1979/81 panel. The adjusted group means depicted in Figure 8(p) indicated that wage growth of those workers who had ≤ 2 years of job tenure tended to be below the grand mean while those who had ≥ 11 years of tenure had wages above the grand mean after adjustment for covariates. The unadjusted effects of the physical attractiveness on wage growth presented as deviations from the grand mean were also consistent with the positive effects at all levels of job tenure in most panels. These patterns tended to be much less transparent and largely uninterpretable once controls were introduced. The adjusted effects produced one statistically significant interaction in the 1977/79 panel suggesting that attractiveness had a positive effect on wage growth for workers who had less than 2 years of the job tenure while its effect was largely irrelevant or even negative for those workers who accumulated longer job tenures.

Table 7.21 Adjusted and unadjusted effects of physical attractiveness ratings and job tenure on log(hourly wages)^a: panel samples

Attractiveness and job tenure	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
≤ 2 years	-9.1% (-28.6%) ^b	-15.5% (-38.3%)	+13.7% (+0.7%)
3 - 10 years	-18.2% (-36.0%)	+0.2% (-18.5%)	+7.2% (-8.0%)
≥ 11 years	+19.9% (+4.6%)	-7.0% (-20.7%)	-4.6% (+11.8%)
Average			
≤ 2 years	-3.5% (-17.2%)	-3.7% (-17.3%)	-2.2% (-13.9%)
3 - 10 years	+2.4% (+0.3%)	+0.8% (-0.4%)	-0.8% (-3.0%)
≥ 11 years	+3.6% (+9.1%)	+5.3% (+10.2%)	+1.3% (+5.5%)
Above average			
≤ 2 years	+4.0% (+1.5%)	+2.1% (-1.2%)	-2.3% (-14.4%)
3 - 10 years	-6.3% (-2.0%)	-4.5% (-1.2%)	+0.5% (+9.5%)
≥ 11 years	+1.8% (+25.2%)	+4.1% (+29.5%)	+2.2% (+18.7%)
P values			
Looks	0.848 (0.002)	0.409 (0.000)	0.595 (0.140)
Tenure	0.013 (0.000)	0.571 (0.006)	0.818 (0.019)
Looks X Tenure	0.027 (0.123)	0.423 (0.196)	0.631 (0.488)
^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

Figure 8(p) Adjusted and unadjusted effects of physical attractiveness ratings and job tenure on log(hourly wages): panel estimates

Figure 8 (i)

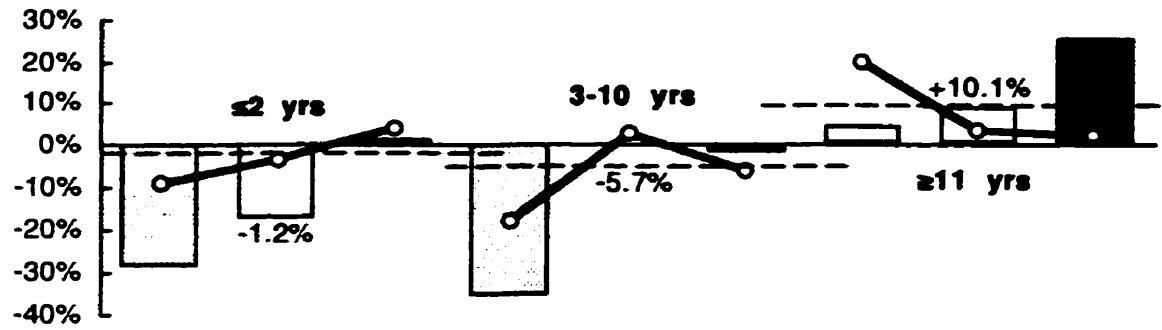


Figure 8 (ii)

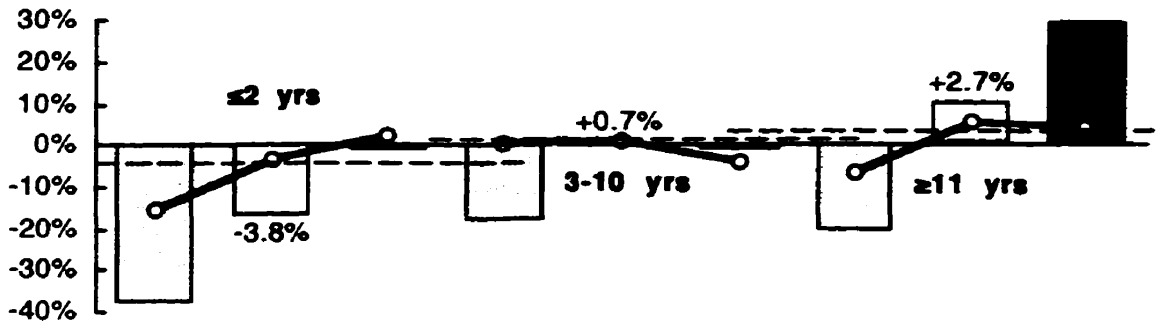
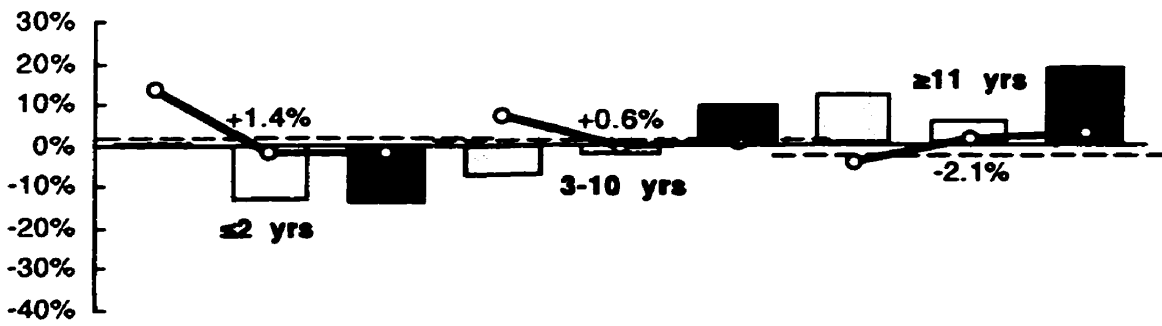


Figure 8 (iii)



Below average
 Average
 Above average
 Adjusted
 Group means
0% = GRAND MEAN

The results based on the unadjusted regression coefficients (β - slopes) for the effects of physical attractiveness *within* each level of job tenure (Table 7.22) produced all but one positive coefficients thus suggesting that looks played a positive role on wage growth regardless of the amount of job tenure. These unadjusted effects identified a different level of job tenure in each of the data sets as the one where the effects of attractiveness were the strongest.

Table 7.22 Summary: hypothesis no. 8 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and job tenure (1 = ' ≤ 2 years', 2 = '3-10 years', 3 = ' ≥ 11 years') on log(hourly wages): Panel samples					
	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H_0
Unadjusted effects $H_0: \beta_1 = \beta_2 = \beta_3$ $H_a: \beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta_{(1)} = +.172$ $\beta_{(2)} = +.070$ $\beta_{(3)} = +.133$ 1>2<3 ✗ .637 ✗	$\beta_{(1)} = +.173$ $\beta_{(2)} = +.040$ $\beta_{(3)} = +.222$ 1>2<3 ✗ .301 ✗	$\beta_{(1)} = -.038$ $\beta_{(2)} = +.110$ $\beta_{(3)} = +.075$ 1<2>3 ✗ .208 ✗	 0 of 3 0 of 3	 (0 of 6) NO
Adjusted effects³ $H_0: \beta_1 = \beta_2 = \beta_3$ $H_a: \beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta_{(1)} = +.049$ $\beta_{(2)} = -.011$ $\beta_{(3)} = -.007$ 1>2<3 ✗ .053 ✓	$\beta_{(1)} = +.060$ $\beta_{(2)} = -.036$ $\beta_{(3)} = +.044$ 1>2<3 ✗ .936 ✗	$\beta_{(1)} = +.008$ $\beta_{(2)} = +.004$ $\beta_{(3)} = +.041$ 1>2<3 ✗ .325 ✗	 0 of 3 1 of 3	 (0 of 6) NO
¹ $\beta_1 < \beta_2 < \beta_3$ ² F-ratio to test the increment in the R^2 ($\beta_3 \times \text{looks} \times \text{tenure}$) ³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence					

However, none of the unadjusted interactive effects reached conventional significance level. As expected, the adjusted coefficients tended to be much smaller and largely inconsistent with our expectations. There was also one statistically significant interaction further supporting the interaction based on the MANCOVA approach that was described earlier.

Summary

The effect of looks on wage growth was not modified by worker's job tenure. Overall, these results provided no support for hypothesis no. 8 tested in panel samples.

Panel Results: Hypothesis no. 9

The effect of attractiveness on wage growth, all else being equal, should be faster when indirect measures of competence or productivity rather than the direct ones are possible or used.

The analyses presented below were designed to examine whether the relationship between physical attractiveness and wage profiles was conditioned by the frequency of on-the-job supervision in the panel models. Table 7.23 and Figure 9(p) present numerical and graphical results of these specifications. The effects of the frequency of supervision on wage growth were statistically significant in the unadjusted models but they disappeared once controls were introduced. Relative to the grand mean, the wages of those workers who reported to be supervised daily grew at a slightly faster rate than those who reported less frequent supervision (+0.2 to +1.1% versus -1.0% to -3.2%).

Table 7.23 Adjusted and unadjusted effects of physical attractiveness ratings and frequency of supervision on log(hourly wages)^a: panel samples

Attractiveness and supervision	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
< Daily	-3.2% (-16.3%) ^b	-6.6% (-18.8%)	+4.8% (+4.5%)
Daily	-9.2% (-39.0%)	-5.8% (-41.6%)	+0.9% (-12.9%)
Average			
< Daily	+1.9% (+1.9%)	+1.2% (+0.7%)	-1.5% (-2.1%)
Daily	-1.3% (-14.1%)	-0.5% (-9.8%)	+3.6% (-6.2%)
Above average			
< Daily	0.0% (+13.2%)	+0.7% (+13.3%)	+0.9% (+8.3%)
Daily	-3.7% (-12.4%)	-2.3% (-12.4%)	-4.0% (-12.1%)
<i>P values</i>			
Looks	0.600 (0.018)	0.641 (0.007)	0.749 (0.915)
Supervision	0.400 (0.002)	0.799 (0.004)	0.829 (0.102)
Looks X Supervision	0.980 (0.607)	0.962 (0.286)	0.389 (0.310)

^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence

^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses

The unadjusted effects of attractiveness, while not always significant, indicated a fairly uniform pattern of increased wage premia with increased attractiveness regardless of the frequency of on-the-job supervision. These effects were more visible for workers with less than daily supervision and in the first two panels. The introduction of controls had a general effect of 'flattening' these effects. None of the estimated interaction effects, before and after adjusting for covariates, was statistically significant at conventional levels.

Figure 9(p) Adjusted and unadjusted effects of physical attractiveness ratings and frequency of supervision on log(hourly wages): panel estimates

Figure 9 (i)

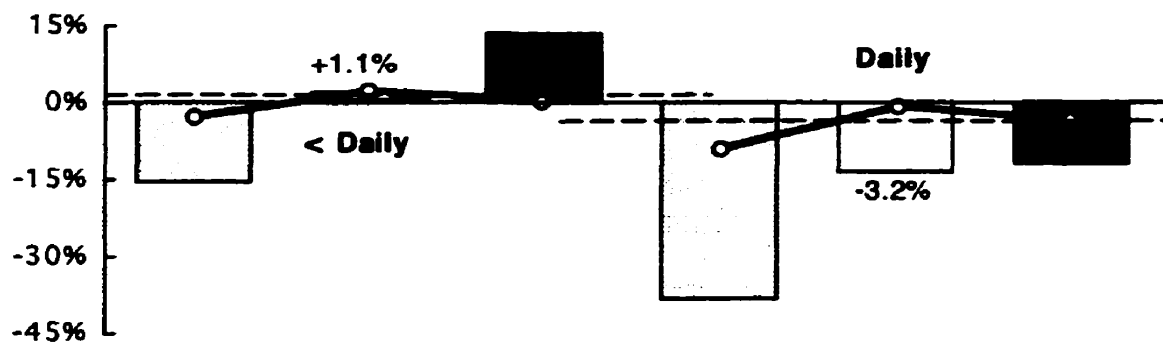


Figure 9 (ii)

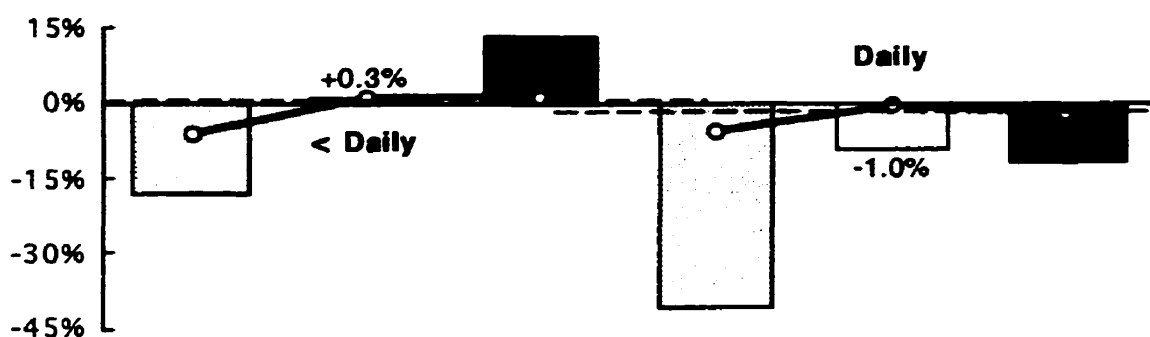
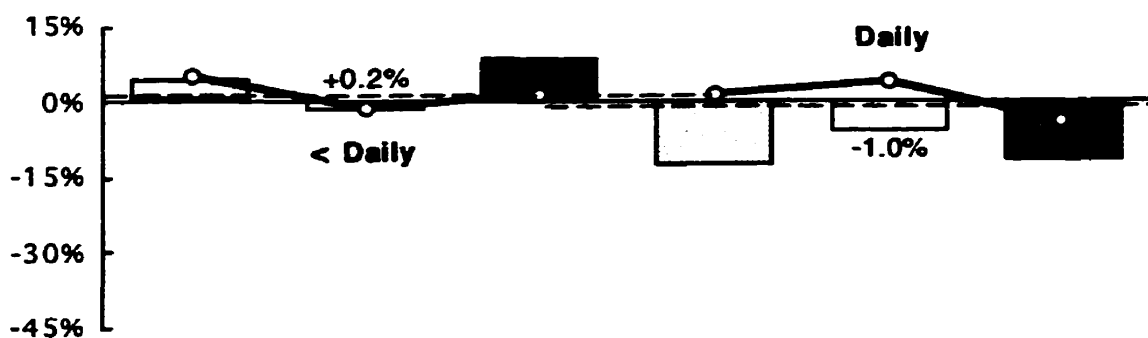


Figure 9 (iii)



Below average
 Average
 Above average
 Adjusted
 - - - Group means
 0% = GRAND MEAN

The unadjusted regression coefficients for the effects of physical attractiveness measured on a 3-point Likert type scale and estimated separately for those workers who reported frequent ('Daily' - "Several times a day" and "Once, twice a day") versus less frequent on-the-job supervision (Table 7.24) -- while not significantly different -- tended to be 'steeper' in all three panels for those workers who reported less frequent level of supervision.

Table 7.24 Summary: hypothesis no. 9 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and frequency of supervision (<d = 'less than daily', d = 'daily') on log(hourly wages): Panel samples					
	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H ₀
Unadjusted effects H ₀ : $\beta_{<d} = \beta_d$ H _a : $\beta_{<d} > \beta_d$ Direction ¹ Significance (p) ²	$\beta_{<d} = +.129$ $\beta_d = +.071$ +.058 ✓ .466 ✗	$\beta_{<d} = +.143$ $\beta_d = +.062$ +.081 ✓ .298 ✗	$\beta_{<d} = +.062$ $\beta_d = -.034$ +.096 ✓ .298 ✗	3 of 3 0 of 3	(3 of 6) ?
Adjusted effects³ H ₀ : $\beta_{<d} = \beta_d$ H _a : $\beta_{<d} > \beta_d$ Direction ¹ Significance (p) ²	$\beta_{<d} = -.010$ $\beta_d = +.016$ -.026 ✗ .954 ✗	$\beta_{<d} = -.009$ $\beta_d = +.007$ -.016 ✗ .792 ✗	$\beta_{<d} = +.003$ $\beta_d = -.051$ -.054 ✓ .361 ✗	1 of 3 0 of 3	(1 of 6) NO
¹ $\Delta(\beta_{<d} - \beta_d)$ ² F-ratio to test the increment in the R ² ($\beta_3 \times \text{looks} \times \text{Supervision}$) ³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, education, experience and its square, job tenure, union membership, public sector status (79/81), marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence					

These unadjusted effects ranged from +6.2% to +14.3% for the less frequently supervised workers and from -3.4% to +7.1% for the more frequently supervised workers for a one-unit change in the attractiveness ratings before adjusting for controls. The adjustment for controls not only reversed most of these effects but also reduced them to near-zero levels. Not surprisingly, none of the interactive terms reached conventional significance levels. Overall, there was little to support the hypothesis that the effect of attractiveness on wage profiles might be conditioned by the closeness or frequency of on-the-job supervision in the panel data.

Summary

The effect of looks on wage growth was not modified by the frequency of on-the-job supervision. Overall, these results provided no support for hypothesis no. 9 tested in panel samples.

Panel Results: Hypothesis no. 10

The effect of attractiveness on wage growth, all else being equal, should be stronger as the level of formal schooling increases.

The overall effect of education on wage growth was significant in most specifications. The adjusted wage growth of workers with ≤ 12 years of formal schooling were from -2.6% to -6.6% below the grand mean while those with university education had wage growth from +8.7% to 16.1% above it. The wages of workers with between 13-14 years of formal schooling were either slightly above or below the grand mean (from -4.5% to +2.4%). In general, the

Table 7.25 Adjusted and unadjusted effects of physical attractiveness ratings and years of education on log(hourly wages)^a: panel samples

Attractiveness and education	1977/79 (n=659)	1977/81 (n=667)	1979/81 (n=714)
	(i)	(ii)	(iii)
Below average			
≤ 12 years	-8.4% (-26.2%) ^b	-9.4% (-24.6%)	-9.1% (-13.3%)
13 - 14 years	-17.5% (-8.8%)	-20.7% (-39.9%)	+14.3% (-6.5%)
≥ 15 years	+20.6% (-1.1%)	+10.2% (-1.8%)	+16.9% (+32.3%)
Average			
≤ 12 years	-2.8% (-15.8%)	-4.6% (-15.7%)	-4.5% (-18.4%)
13 - 14 years	+3.1% (+2.1%)	+4.6% (+4.1%)	-2.8% (-2.2%)
≥ 15 years	+4.3% (+42.6%)	+10.9% (+39.8%)	+7.4% (+28.7%)
Above average			
≤ 12 years	+4.7% (-12.9%)	-0.7% (-6.4%)	-1.8% (-10.1%)
13 - 14 years	-5.6% (+6.8%)	-4.3% (-2.2%)	-1.2% (-3.4%)
≥ 15 years	+2.5% (+36.1%)	+9.8% (+35.5%)	+5.0% (+25.2%)
<i>P values</i>			
Looks	0.663 (0.182)	0.466 (0.018)	0.481 (0.955)
Education	0.017 (0.000)	0.124 (0.000)	0.020 (0.000)
Looks X Education	0.848 (0.665)	0.423 (0.210)	0.486 (0.713)
^a Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence			
^b Adjusted deviations from grand mean, unadjusted deviations appear in parentheses			

unadjusted effects were larger and suggested that the increased returns to attractiveness were applicable at each level of schooling. This pattern was noticeably different, and less interpretable, once controls were introduced. The small number of workers in the 'below average' category, especially at the higher levels of formal schooling, was probably responsible for considerable departures from linearity presented in Figure 10(p). However, none of these 'deviations' was large enough to produce a statistically significant interaction effect.

Figure 10(p) Adjusted and unadjusted effects of physical attractiveness ratings and years of education on log(hourly wages): panel estimates

Figure 10 (i)

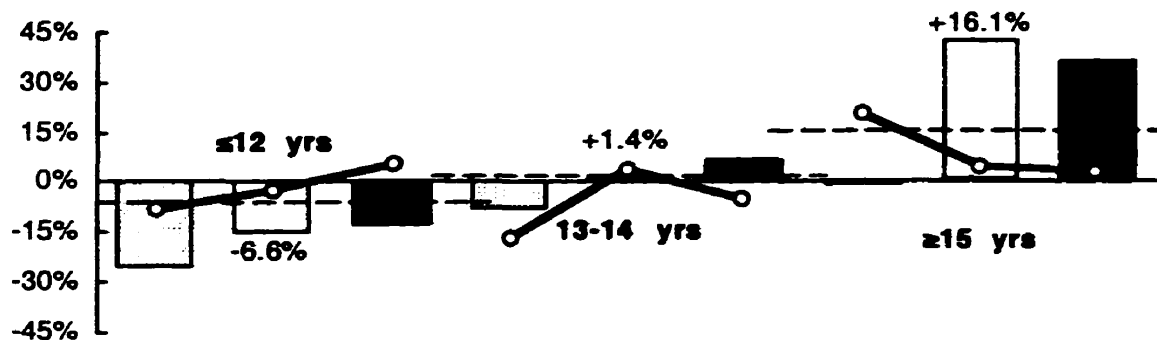


Figure 10 (ii)

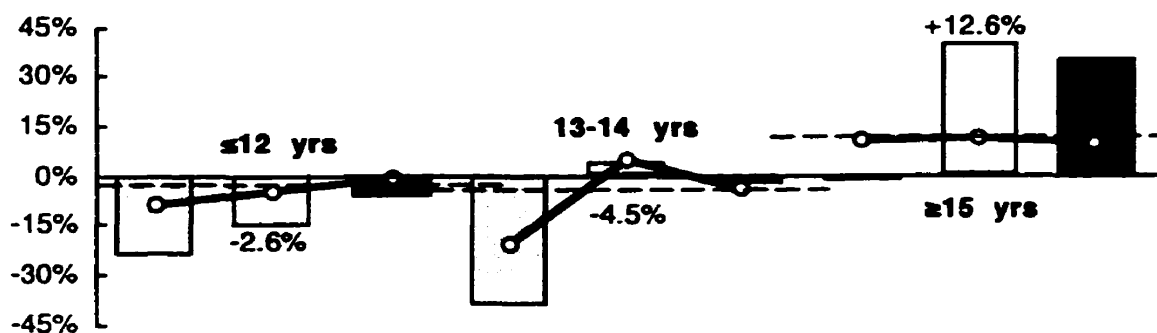
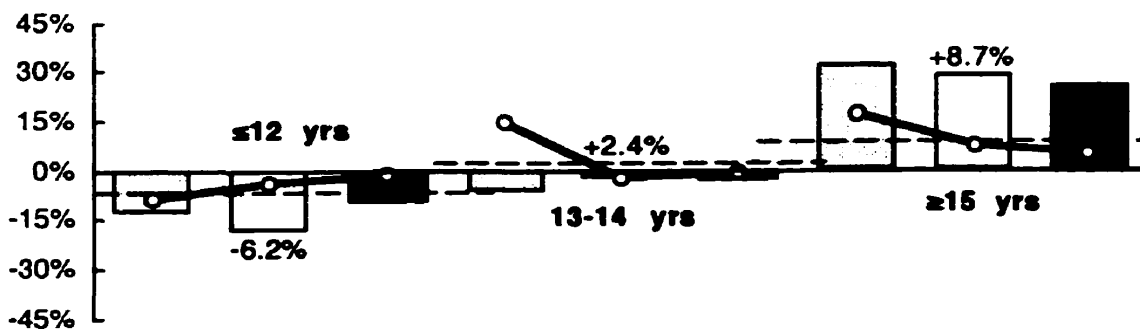


Figure 10 (iii)



□ Below average □ Average ■ Above average ○ Adjusted --- Group means
 0% = GRAND MEAN

Table 7.26 Summary: hypothesis no. 10 Unadjusted and adjusted unstandardized regression coefficients and significance tests for the interaction effects of attractiveness and years of education (1 = '≤12 years', 2 = '13-14 years', 3 = '≥15 years') on log(hourly wages): Panel samples					
	1977/79 n=659	1977/81 n=667	1979/81 n=714	Summary	Reject H ₀
Unadjusted effects H ₀ : $\beta_1 = \beta_2 = \beta_3$ H _a : $\beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta_{(1)} = +.052$ $\beta_{(2)} = +.055$ $\beta_{(3)} = +.005$ 1 < 2 < 3 ✗ .396 ✗	$\beta_{(1)} = +.092$ $\beta_{(2)} = +.016$ $\beta_{(3)} = +.022$ 1 > 2 < 3 ✗ .510 ✗	$\beta_{(1)} = +.052$ $\beta_{(2)} = +.004$ $\beta_{(3)} = -.035$ 1 > 2 < 3 ✗ .273 ✗	 0 of 3 0 of 3	 (0 of 6) NO
Adjusted effects³ H ₀ : $\beta_1 = \beta_2 = \beta_3$ H _a : $\beta_1 < \beta_2 < \beta_3$ Direction ¹ Significance (p) ²	$\beta_{(1)} = -.002$ $\beta_{(2)} = +.063$ $\beta_{(3)} = -.036$ 1 < 2 < 3 ✗ .152 ✗	$\beta_{(1)} = +.048$ $\beta_{(2)} = -.005$ $\beta_{(3)} = -.008$ 1 > 2 < 3 ✗ .380 ✗	$\beta_{(1)} = +.031$ $\beta_{(2)} = -.007$ $\beta_{(3)} = -.038$ 1 > 2 < 3 ✗ .176 ✗	 0 of 3 0 of 3	 (0 of 6) NO
¹ $\beta_1 < \beta_2 < \beta_3$ ² F-ratio to test the increment in the R ² ($\beta_3 \times \text{looks} \times \text{education}$) ³ Adjusted for lagged continuous and indicator variables measuring log(hourly wages), gender, experience and its square, job tenure, union membership, public sector status (79/81), frequency of supervision, marital status, foreign born, firm size (79/81), and dummy variables measuring occupation and region/province of residence					

The results based on the unstandardized regression coefficients (β - slopes) for the effects of physical attractiveness *within* each educational level (Table 7.26) failed to produce any statistically significant interactions both before and after adjusting for controls. In all three unadjusted specifications the coefficients for attractiveness for workers with lower levels of formal schooling were the largest and they ranged from +5.2% to +9.2% for a one-unit change in

the attractiveness ratings. The adjusted effects tended to be much smaller and several had negative signs. While not statistically significant, these results seem to suggest that attractiveness effects might be somewhat more relevant at lower levels of educational attainment. Because the number of workers who were rated as 'below average' at the higher levels of educational attainments was even smaller in the panel than in the cross-sectional samples, it remains unclear whether the effects of attractiveness on wage profiles were equally applicable or not across different levels of formal education.

Summary

The effect of looks on wage growth might be modified by worker's level of formal schooling. Overall, these results provided no support for hypothesis no. 10 tested in cross-sectional samples.

Panel Results: Summary

Table 7.27 provides an overview of all the hypotheses tested in the panel samples. According to the panel estimates, physical attractiveness was associated with economic success but only before adjustments for the key human capital and institutional characteristics of the workers were made. More specifically, the 'above average' rated workers received pay growth premia ranging from +4.7% to +6.6%, average rated workers received pay growth penalties ranging from -1.7 to -2.9% while those rated as below average received pay growth premia/penalties ranging from +2.0% to -24.6% relative to the unadjusted grand mean. Furthermore, these unadjusted differences reached statistical significance in two of the three models specified. The panel specifications that utilized physical attractiveness variable measured on an

ordinal 3-point scale indicated that one unit change in attractiveness ratings was associated with hourly wage growth ranging from +4.6% to +11.9% for a one-unit change in the attractiveness ratings and these effects were statistically significant in two of the three panel specifications. The results from these panel estimates tend to support findings from other studies (Roszell, Kennedy, Grabb, 1989; Hamermesh and Biddle, 1994) whenever similar models were estimated. These pay growth premia and penalties based on looks largely disappeared once controls, especially lagged wages, were introduced.

Table 6.30 Overall summary: unadjusted and adjusted effects
Panel estimates

Hypothesis	Supported	Marginal evidence	Not supported	Different than hypothesized
Looks . unadjusted . adjusted	✓		✓	
Looks x Gender . unadjusted . adjusted			✓ ✓	
Looks x Country of origin . unadjusted . adjusted		✓	✓	
Looks x Experience . unadjusted . adjusted			✓ ✓	
Looks x Firm size . unadjusted . adjusted		✓	✓	
Looks x Occupation . unadjusted . adjusted			✓ ✓	
Looks x Union status . unadjusted . adjusted	✓		✓	
Looks x Job tenure . unadjusted . adjusted			✓ ✓	
Looks x Supervision . unadjusted . adjusted		✓	✓	
Looks x Education . unadjusted . adjusted			✓ ✓	? ?

As indicated elsewhere, we were also interested to assess whether the effects of attractiveness were symmetrical or not. This hypothesis was tested throughout all panel specifications. However, because the analyses of the effects of attractiveness on wage growth generally failed to produce statistically significant effects or even patterns of coefficients consistent with differential wage growth based on physical attractiveness or its interactions with other variables, the issue of symmetry in the panel estimates remains largely unresolved. Conceptually, this difficulty is further magnified by our inability to unequivocally decide who is being illegitimately over- or under- rewarded and under what circumstances. Consequently, the issue of whether physical attractiveness should be treated as a dichotomy, trichotomy or a continuous measure also remains unanswered.

The apparent 'disappearance' of the effects of attractiveness in most panel specifications should not be interpreted as "proof" that the cross-sectional results were due entirely or even largely to reverse causality. This is because the inclusion of lagged log(hourly wages) changed our estimates from wage to wage growth equations. This conceptual change, especially in the context of relatively small sample sizes, restricted time frame (i.e., 2 to 4 years), and measurement problems associated with physical attractiveness (due to measurement error or true change), provided for a very severe empirical test of our hypotheses. The severity of our approach is further exemplified by the fact that other powerful and well established predictors of earnings such as work experience, job tenure or union membership also failed to generate statistically significant coefficients in the wage growth models.

SECTION VIII - CONCLUSION

The main purpose of this study was to examine the relevance of physical attractiveness as far as the economic success of men and women in Canada was concerned. We examined the relationship between physical attractiveness and wages treating the latter as marginal to a baseline, human-capital derived equation. We derived various hypotheses about the consequences of physical attractiveness on earnings and wage growth of Canadian workers and utilized status generalization theory as a social-psychological explanatory device designed to understand why and how people might tend to discriminate on the basis of physical attractiveness in the labour market. To test these hypotheses we estimated wage and wage growth equations using the OLS and MANCOVA approach in both cross-sectional and panel data sets derived from the Canadian Quality of Life survey. Overall, our results provide a moderate level of support for the thesis that physical attractiveness plays a role in the wage determination process in modern labour markets. More specifically, there were some clear main effects -- also reported by others -- but they were not of overwhelming magnitude.

Because of the potential simultaneity problems associated with cross-sectional specifications, we have also estimated the wage growth equations using panel data that incorporated the lagged effects for all time-variant variables including log hourly wages and physical attractiveness measured at time_{t-1} and time_{t-2}. These analyses were designed to provide a modest assessment of the reverse causality between physical attractiveness and economic success. Generally, the results of these specifications provided little support for the notion that physical attractiveness ratings were associated with wage growth for workers

interviewed as part of the CQL panel. There was also little evidence to suggest that the relationship between physical attractiveness and wage growth might be moderated by other individual or institutional characteristics of the workers as predicted by status generalization theory. The fact that the effects of attractiveness largely disappeared in panel estimates should not be used, however, to dismiss the cross-sectional results as entirely or even largely due to reverse causality. The change from wage to wage growth profiles, implied by these models, suggests that the strongest conclusion that we can draw on the basis of panel findings is that reverse causality cannot be excluded as possibility. It is also important to stress that panel models that utilized the lagged effects for physical attractiveness rating but did not control for previous wages resulted in significant coefficients for the attractiveness variables.

On a somewhat different level, this study demonstrated the importance or even necessity of taking into account fairly substantial bodies of evidence generated in two seemingly hostile areas and linking and testing them in the "real world" of earnings determination. However, the fact that the "real world" manipulation appears to be lacking in fundamental potency is not all that surprising. First, because the "real world" was approximated through the fallible measures of physical attractiveness (and other variables) used in this and similar studies. Second, because inspections of the effects of physical attractiveness -- guided by status generalization theory -- of assorted contingencies held to govern, mediate, or condition such effects involve perilously long chains of inferences that are threatened by all sorts of internal and external 'noise'. Third, because the introduction of human capital controls further forced attention to 'but a residual' of what was fragile to begin with. It is important to stress, however, that while the unadjusted effects tended to be larger they were no more

supportive of the hypothesized relationships than the adjusted ones. In short, this was a very strong test of the theory, both because it eschewed the carefully controlled circumstances of the psycho-social laboratory and because it moved beyond the cross-sectional paradigm. Whether the resulting inability to support status generalization theory was due to the theory that engages matters too weak to conform to the theoretical logic in the "real world" or whether it reflected weak measurement remains unanswered.

As indicated elsewhere, status generalization theory portrays attractiveness as being a "diffuse status characteristic". which has a greater "spread of relevance" than many other traits; it is used to generate expectation states regarding a target's performance, even without conscious awareness or prior association between characteristic in question and performance. This theoretical approach had particular appeal to our study as it explicitly recognized that attractiveness will have varying impact upon performance expectations and different status characteristics (e.g., gender, age, union membership) may combine to influence generalized expectation states, specific expectations states and ultimately, interaction patterns. In other words, status generalization theory explicitly suggested that individual context, including other individual or institutional characteristics of the target person and access to other information should be considered when studying the effects of the physical attractiveness stereotype.

At the same time, while some effects of physical attractiveness were clearly there, they were neither that strong nor that consistent as to make too much of it. Accordingly, the status generalization framework proved of a limited heuristic value as far as the relationship between physical attractiveness and

economic success was concerned. In fact, there were some marginal results suggesting that effects of attractiveness might be primarily restricted to less advantaged workers in terms of occupation, level of schooling or union membership. While these findings were clearly unsupportive of status generalization theory, they were at least suggestive that the strongest effects might occur where 'institutional qualifications' or worker bargaining power plays the weakest role in the wage determination process. The emergent patterns, albeit fairly weak, were nevertheless suggestive of an illegitimate application of ascription (by employers or customers) among workers with the limited resources to resist it. While the effects of attractiveness on wage profiles as mitigated by union membership were originally interpreted in terms of status generalization theory they are also consistent with interpretations that unions might reduce the effects of ascriptive characteristics among their members thus further supporting this line of interpretation.

On a somewhat different level, this study further underscored the point that in the context of increased competitiveness, globalization and rising unemployment even small effects attributable to physical attractiveness may be substantively significant. It also suggests that the effects of some traditionally established variables in the economic literature such as occupation, union membership, frequency of on-the-job supervision, firm size, or level of formal schooling might be in fact contingent on one's level of attractiveness. These findings provide a further challenge as far as our understanding of the wage determination process is concerned. It seems that the labour market and its institutions are not totally immune to the effects of appearance and that further studies are needed in order to gain a better understanding of this phenomenon

and possibly other individual attributes neglected in the wage determination literature.

In summary, the present study provides some support for the hypothesis that physical attractiveness plays a role as far as wage profiles of Canadian workers are concerned. However, most these effects tended to be relatively small, generally similar across different sub-populations of workers and more consistent with ascription among workers with the limited resources to resist it rather than hypothesized effects based on status generalization theory and physical attractiveness as a diffuse status characteristic. The obvious moral of this study is that appearances must be read as appearances or else they mislead.

Study limitations and future research

This section shares the same heading as many limitations of this study also represent opportunities for future research. One of the weakest points of this and other similar studies conducted in this area was the measurement and quantification of the attractiveness variable. The reliable and valid measurement of physical attractiveness variable needs to be improved and standardized. As indicated elsewhere, the use of internal reliability approach to 'assess inter-judge agreement' is largely responsible for creating an illusion that this issues is already satisfactorily resolved.

Furthermore – assuming that the judgment by strangers is logically the true measure of physical attractiveness -- employers, co-workers or even some regular customers who have a determining influence on the career of workers,

often become anything but strangers to these workers over time. In other words, physical attractiveness as seen by regular associates of a worker may, after a while, come to have little to do with physical attractiveness as perceived by strangers, especially since the physical attractiveness variable used in the present study might be associated with a much larger ensemble of traits on which the appreciation of workers by their colleagues, employers and customers may come to rest.

More generally, physical attractiveness assessment in the CQL data might capture many different dimensions including everything in the context of the face-to-face interview conducted in the respondents' homes that pushed the interviewer towards declaring that the interviewee was a nice person. This is because, as indicated elsewhere, the assessment of physical attractiveness was made at the end of the interview, after a lengthy exposition to whatever charm the interviewee suffused. The wording of the physical appearance question utilized in the CQL instructed interviewers to assess physical appearance of the respondent's appropriate for their age and sex. It is our opinion that these instructions weakened rather than strengthened the measurement of this variable. This is because the instruction to 'judge attractiveness net of age and gender' not only failed to control for the confounding effect of age and gender (see Table 5.6) but, and more importantly, explicitly urged raters to discount or disable the mind set that makes judgment feasible. This is because a lot of labour market segments are relatively homogenous in terms of age/gender mix and thus to instruct raters to discard this information amounts to asking whether Leonardo DiCaprio or Gloria Stuart is 'more attractive'.

The additional weaknesses and limitations of this study (and hence opportunities for future research) had to do with a more adequate determination of causality in the relationship between physical attractiveness and economic success. This included the use of small sample sizes and restricted time frame of the panel data to provide a fair test of our hypotheses. Finally, multiple significance testing and use of a fairly dated Canadian survey data introduces the possibility that some of the findings reported in this study might be due to chance or might be unique to the Canadian labour market and hence not generalizable elsewhere.

In order to adequately assess the plausibility of a relationship between physical attractiveness and socioeconomic success one needs to design a study or to use an existing data set that would help to reduce/eliminate threats to both the internal and external validity as outlined elsewhere. Ideally, one would design a prospective, tightly controlled, longitudinal study that would follow-up a representative sample of subjects whose physical attractiveness was adequately conceptualized and assessed objectively and without error (or subjectively but with considerable interrater agreement) and would then relate the measures of physical attractiveness to a predefined number of reliable and valid outcomes. One would need further to assume that physical attractiveness is stable over time (or that it changes in uniform fashion for all subjects) and that all the relevant confounders were either identical, to start with, for individuals differing in terms of attractiveness or that they were matched or statistically adjusted for. Finally, the number of subjects enrolled in the study would need to be sufficient to detect hypothesized differences, if in fact they existed. To our knowledge, no such studies or data sets exist.

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