

Ugly Criminals

H. Naci Mocan

University of Colorado at Denver
and NBER

Department of Economics
University of Colorado at Denver
Campus Box 181, P.O. Box 173364
Denver, CO 80217-3364
E-mail: nmocan@carbon.cudenver.edu

Erdal Tekin

Georgia State University
and NBER

Department of Economics
Andrew Young School of Policy Studies
Georgia State University
P.O. Box 3992
Atlanta, GA 30302-3992
E-mail: tekin@gsu.edu

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ABSTRACT

Using data from three waves of Add Health we find that, consistent with theoretical expectations, being very attractive reduces a young adult's (ages 18-26) propensity for criminal activity and being unattractive increases it. A variety of tests demonstrate that this result is not because beauty is acting as a proxy for socio-economic status. Being very attractive is also positively associated with wages, and with adult vocabulary test scores, which suggests the possibility that beauty may have an impact on human capital formation. We demonstrate that, especially for females, holding constant current beauty, high school beauty (pre-labor market beauty) has a separate impact on crime, and that high school beauty is correlated with variables that gauge various aspects of high school experience, such as GPA, suspension or having being expelled from school, and problems with teachers.

These results suggest two handicaps faced by unattractive individuals. First, a labor market penalty provides a direct incentive for unattractive individuals toward criminal activity. Second, the level of beauty in high school has an effect on criminal propensity 7-8 years later, which seems to be due to the impact of the level of beauty in high school on human capital formation, although this second avenue seems to be effective for females only. These findings are robust to numerous specification and robustness checks.

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*“I am too ugly to get a job”
A Miami man’s statement in 2003 as to why he committed robberies.*

I. Introduction

It has been shown that beauty is positively related to earnings in the labor market (Hamermesh and Biddle 1994, Biddle and Hamermesh 1998, Harper 2000, Hamermesh, Meng and Zhang 2002). It has also been shown that better-looking people sort themselves into occupations, and sectors within occupations, where an earnings premium exists on beauty (Hamermesh and Biddle 1994, Biddle and Hamermesh 1998). Persico, Postlewaite and Silverman (2004) demonstrate that taller workers receive a wage premium, which can be traced back to their height in high school, and that this effect is due to the impact of height on participation in high school sports and clubs. Along the same lines, Kuhn and Weinberger (2005) show that leadership skills in high school generate positive wage effects later in life.

These are important and provocative findings regarding the development of a more complete understanding of wage determination, because they underline the significance of non-cognitive factors in determining worker rewards, and also because they point to non-traditional human capital components (e.g. skills acquired through socialization in high school) that are evidently valued in the labor market.

These findings give rise to an interesting hypothesis regarding workers’ response to labor market incentives. If beauty commands a positive earnings premium in the legal labor market, and if criminal activity is a labor market choice of rational agents where the decision to engage in crime is made by comparing the financial rewards from crime to

those obtained from legal work¹, then it is expected that less attractive people sort themselves into the criminal sector.²

In this paper, we provide evidence regarding the impact of beauty on the extent of criminal activity of individuals. We find that unattractive individuals commit more crime in comparison to average-looking ones, and very attractive individuals commit less crime in comparison to those who are average-looking. This relationship holds for a number of self-reported criminal activity measures.

Consistent with previous research (Hamermesh and Biddle 1994, Biddle and Hamermesh 1998), we find that in our data set beauty is positively related to wages. We also show that beauty is positively related to the scores received on an achievement test, taken as a young adult, which suggests that being an unattractive student in high school may have hindered human capital development -- possibly through teacher and peer interactions. We provide evidence supporting this hypothesis in models where the extent of pre-labor market beauty (beauty in high school) explains adult crime, controlling for adult beauty and an extensive array of background characteristics. This result is consistent with empirical evidence reported by Figlio (2005) who shows that teachers in a Florida school district have lower expectations of children³ who have names that are associated with low socio-economic status. Our results are also consistent with recent experimental evidence provided by Mobius and Rosenblat (2006) who find that

¹ Individuals also take into account the probabilities of apprehension and conviction, and the severity of punishment (Becker 1968, Ehrlich 1973, Block and Heineke 1975, Mocan, Billups and Overland 2005).

² It is interesting to note that there is research which indicates that criminals who have their physical appearance surgically enhanced are less likely to return to prison (Lewison 1974).

³ More specifically, teachers treat children differently in terms of referrals to gifted programs and promotion to the next grade.

physically attractive individuals have better communication skills, which are translated into higher wages. Mobius and Rosenblat (2006) cite Hatfield and Sprecher (1986) to suggest that preferential treatment of better-looking kids by teachers generates confidence and social skills in these kids which lead to better communication skills and higher wages.

Given the result that high school beauty is related to criminal involvement in post-high school years (controlling for beauty in post-high school years), we investigate whether this result emerges because beauty in high school is related to aspects of human capital formation in high school. Our analysis shows that high school beauty is indeed correlated with variables gauging high school experience of students, such as grade point average, problems with teachers and suspension from high school.

Taken together, our results suggest two mechanisms through which beauty affects crime. First, a labor market reward to beauty motivates young adults (ages 18-26) to sort themselves on the margin such that unattractive ones find it more advantageous to engage in crime. Second, beauty in high school has a separate, independent effect on crime. Here, the pathway is from being unattractive in high school to undesirable high school experience and diminished human capital formation in high school. This second mechanism through which beauty affects crime is more pronounced for females.

It is important to establish causal effects from beauty to criminality, and therefore to investigate whether beauty is acting as a proxy for some unobserved background characteristic. Various analyses in the paper indicate that this is not the case. In Section 2, we provide the basic analytical framework. Section 3 describes the data, and Section 4 presents the results and extensions. Section 5 is the conclusion.

II. Analytical Framework and Empirical Implementation

Standard economic models of crime in the tradition of Becker (1968) and Ehrlich (1973) suggest that individuals engage in crime based on a comparison of the expected utility from criminal activity to the utility associated with legal work, taking into account the subjective probability of apprehension and the severity of punishment. More recent dynamic models of crime (e.g. Mocan Billups and Overland 2005) extend this framework and indicate that expected future values of legal and illegal earnings influence the extent of criminal activity of the individual. Thus, if beauty commands a premium in the legal labor market, less attractive individuals will have a higher incentive to participate in the criminal sector; and this behavior would be compounded in forward-looking models if less-attractive individuals face handicaps in the future such as worse future legal earnings and worse marriage prospects.

On the other hand, good looks may enhance utility in the criminal sector. This can happen, for example, if beauty instills trust, which would increase the returns from certain crimes such as fraud. In addition, the probability of apprehension may be a function of beauty in that, good looks may reduce the probability of apprehension and conviction (Efran 1974, DeSantis and Kayson 1997). In this case, good-looking people would have an advantage in both legal and criminal sectors, and the net impact of beauty on crime could be ambiguous. However, for most types of crimes, the effect of being attractive on criminal earnings is likely to be small.⁴

If the beauty premium in the criminal sector is zero, or if it is smaller than the premium in the legal labor market, this would result in sorting of more attractive

⁴ One can especially argue that in some white-collar crimes, such as financial fraud, attractiveness may be an advantage by helping the criminals gain trust of their victims as discussed above. However, fraud is not among the crime types analyzed in this paper.

individuals into the labor market and less attractive ones into the criminal sector. In addition, if some component of the beauty premium in the legal labor market results from differential treatment by employers, one would expect a higher concentration of unattractive individuals in the self-employment sector.⁵ To the extent that most criminals are self-employed, this would motivate sorting of unattractive individuals into the criminal sector and attractive individuals into the legal labor market.⁶ Thus, the average level of beauty would be higher in the labor market in comparison to the criminal sector.

It should be noted that sorting into different sectors based on attractiveness is likely to be incomplete, i.e., both attractive and unattractive individuals are likely to be found in both sectors (Hamermesh and Biddle 1994). For example, unattractive individuals who are endowed with a relatively high level of human capital may choose to participate in the legal labor market although attractiveness is rewarded and/or unattractiveness is penalized in that market. Likewise, attractive individuals who are endowed with a relatively low level of human capital may choose the criminal sector even though attractiveness brings little in the criminal sector compared to the labor market.

Empirical crime supply functions take the following form (Grogger 1998, Levitt 1998, Corman and Mocan 2000, Mocan and Rees 2005):

$$CR_i = f(X_i, A, W_i, K_i), \quad (1)$$

where CR_i stands for a measure of the extent of the criminal activity of the i^{th} individual when she/he is a young adult, X_i represents the characteristics of the person such as age,

⁵ In the context of the choice between criminal sector and labor market, customer discrimination would have the same effect as the employer discrimination.

⁶ For a more detailed discussion on the process of sorting into different sectors, see Biddle and Hamermesh (1998).

gender, race, ethnicity and religious beliefs. A stands for deterrence variables such as the arrest rate and the size of the police force, and W_i represents the extent of legal labor market opportunities available to the individual, such as the pertinent wage rate. K_i stands for a vector of family and contextual variables that may influence criminal participation. Replacing W_i in (1) by its determinants, including beauty (B), generates

$$CR_i = g(X_i, A, B_i, K_i) \quad (2)$$

We estimate variations of equation (2) to investigate the impact of beauty on criminal activity. To test if the previously detected wage-beauty relationship holds in our data set, we also estimate wage equations similar to Biddle and Hamermesh (1998), Hamermesh and Biddle (1994). In addition, we estimate models to investigate if beauty is related to a measure of human capital (adult vocabulary test score).

It is important to note that unattractive individuals might experience unfavorable treatment during the pre-labor market period of their lives, which may cause them to be endowed with lower levels of human capital when they reach adulthood. For example, physically attractive individuals may be liked better by their peers, teachers, and even possibly their parents, compared to their unattractive peers (Cialdini 1984, Galluci and Meyer 1984, Feingold 1992). If these attitudes influence human capital acquisition as suggested by recent research in economics (Figlio 2005; Mobius and Rosenblat 2006), they reinforce sorting of unattractive individuals into the criminal sector.

If the extent of beauty in high school impacts the formation of human capital (because beauty influences teacher attitudes and socialization experiences), then high school (i.e. pre-labor market) beauty should have a separate impact on adult crime. To test this hypothesis, we estimate models such as

$$CR_i = h(X_i, A, B_i, B_i^{hs}, K_i), \quad (3)$$

where B_i^{hs} represents the level of beauty of the individual, measured in high school. If the beauty of the person in high school impacts his/her human capital and skill acquisition, which in turn impacts criminal involvement, then B_i^{hs} is expected to have a direct positive impact on CR_i , controlling for current beauty (B_i) in Equation (3).⁷ Furthermore, if the impact of high school beauty on crime works indeed through this channel, then controlling for variables that aim to gauge high school learning experience, (e.g. grade point average, whether the students has problems with teachers, and whether he/she was suspended from school), would diminish the effect of high school beauty (B_i^{hs}) on crime.

III. Data

The data used in the analyses are drawn from the three waves of the National Longitudinal Study of Adolescent Health (Add Health).⁸ The first wave of Add Health

⁷ It can also be the case that these peer and teacher effects may motivate the physically unattractive student to devote more time studying. In this case, unattractiveness would be positively correlated with human capital formation.

⁸ The Add Health project is a program project designed by J. Richard Udry (PI) and Peter Bearman, and funded by grant P01-HD31921 from the National Institute of Child Health and Human Development to the Carolina Population Center, University of North Carolina at Chapel Hill, with cooperative funding participation by the National Cancer Institute; the National Institute of Alcohol Abuse and Alcoholism; the National Institute on Deafness and Other Communication Disorders; the National Institute on Drug Abuse; the National Institute of General Medical Sciences; the National Institute of Mental Health; the National Institute of Nursing Research; the Office of AIDS Research, NIH; the Office of Behavior and Social Science Research, NIH; the Office of the Director, NIH; the Office of Research on Women's Health, NIH; the Office of Population Affairs, DHHS; the National Center for Health Statistics, Centers for Disease Control and Prevention, DHHS; the Office of Minority Health, Centers for Disease Control and Prevention, DHHS; the Office of Minority Health, Office of Public Health and Science, DHHS; the Office of the Assistant Secretary for Planning and Evaluation, DHHS; and the National Science Foundation. Persons interested in obtaining data files from The National Longitudinal Study of Adolescent Health should contact Add Health Project, Carolina Population Center, 123 West Franklin Street, Chapel Hill, NC 27516-2524 (email: addhealth@unc.edu).

was administered between September 1994 and April 1995 to 20,745 nationally representative set of adolescents in grades 7 through 12. An in-school questionnaire was given to every student who attended one of the sampled 132 U.S. schools. A random sample of approximately 200 adolescents from each high school/feeder school pair was selected for in-home interviews. The adolescents are interviewed for the second time in 1996 for Wave II, and for the third time between August 2001 and April 2002 for Wave III. We employ data from Wave III, where the individuals are in the age range of 18 to 26. The number of individuals interviewed in Wave III is 15,197. In some models we also employ data from Waves I and II.

The respondents were asked whether they had committed any of the following acts in the 12 months prior to the interview date: robbery, burglary, assault, selling drugs, damaging property, and theft. Survey administrators took several steps to maintain data security and to minimize the potential for interviewer or parental influence. First, respondents were not provided with any printed questionnaires. Rather, all data were recorded on laptop computers. Second, the respondents listened to pre-recorded questions through earphones for sensitive topics such as delinquent behavior. They then entered their answers directly on the laptops.⁹

At the end of each interview, the interviewer filled out a short survey marking his/her opinions on several characteristics of the respondent. To gauge the level of beauty of the respondents, the interviewers were asked the following question: “How *physically* attractive is the respondent?” Possible answers include: 1) very unattractive 2) unattractive 3) about average 4) attractive 5) very attractive. Table 1 shows the

⁹ For less sensitive questions, the interviewer read the questions aloud, and entered the respondent’s answers.

distribution of beauty ratings among respondents in the third wave when the respondents are in the age range of 18-26. Among both males and females, about 7 percent of respondents were rated as being either very unattractive or unattractive by the interviewers. Roughly half of the full sample is rated as either attractive or very attractive. The proportion rated as attractive or very attractive is higher for females than males. This is consistent with the samples from other studies (e.g. Hamermesh and Biddle 1994). The rating of females seems to be more dispersed about the average category. This is also common in other studies and is consistent with the socio-psychological literature which suggests that women's appearances generate stronger reactions (both negative and positive) than men's (Hatfield and Sprecher 1986). The ratings in our sample are somewhat more skewed toward being more beautiful than both the Canadian and the U.S. samples used in Hamermesh and Biddle (1994). However, when the QES sample used by Hamermesh and Biddle (1994) is adjusted for age, it produces a very similar beauty distribution.¹⁰

Beauty may be in the eye of the beholder, if beholders come from different cultures and from different points in time. As described in detail by Hamermesh and Biddle (1994), there is tremendous consistency in the standard of beauty within a culture in a given time period. Nevertheless, in the paper we address the possibility of different evaluators having different standards of attractiveness.

The beauty question was also asked in the first two waves of the Add Health survey. Evaluations were provided by *different* interviewers. Eighty-five percent of the

¹⁰ In the QES sample used by Hamermesh and Biddle (1994), of all individuals (ages 18-64), 32 % were in top two beauty categories, and 14% were in bottom two. Among 18-26 year olds (which is the age group of this paper), the rates were 45%, and 10%, respectively. We thank Dan Hamermesh for providing this information.

sample was assigned either the same exact rating (on a scale from 1 to 5) in at least two of the three surveys. Seventy-five percent of the individuals in the sample were either assigned the same rating in each of the three waves by different interviewers, or were given the same rating in any of the 2 of the 3 waves and were off by one in the other wave. This is a high degree of consistency across evaluators and time periods, especially because six years had lapsed between the first wave and the third wave, and also because the individuals transitioned from childhood to adulthood during this time period.

Table 2 presents the descriptive statistics of the data obtained from the third wave. The variables that measure the extent of criminal activity are listed in the top section of the table. Indicators of criminal activity are self-reported involvement in robbery, burglary, assault, selling drugs, theft and damaging property. We also construct an aggregate non-drug crime indicator to gauge whether the individual committed theft, burglary, robbery, assault or damaged property in the past 12 months.

A natural way to construct variables to represent beauty would be to choose a three-category distinction: above average beauty (categories 4 and 5), average (category 3), and below average (categories 1 and 2). However, this classification would result in about half of our sample lumped into the above average category. Instead, we categorize individuals into the following three groups: *Very Attractive*, which captures the individuals who received the highest rating of 5; *Unattractive*, which includes those who received a rating of 1 or 2; and the middle (control group) which consists of those who have received a rating of 3 (about average) or 4 (attractive). To investigate the sensitivity of our results to the manner in which beauty is measured, we also present results from a

four-way classification, which divides individuals into the following groups: very attractive (category 5), attractive (category 4), and below average (categories 1 and 2).

Personal characteristics of the individual are age, race and ethnicity, non-wage income, self-reported health status, whether he/she was born in the United States, birth weight, and religious affiliation.¹¹ These variables attempt to control for attributes of the individuals that may influence their propensity toward criminal behavior. We also control for a rich set of socio-economic background variables, which include family and parent attributes that are also potential determinants of the behavior of the individual, and may be correlated with beauty. Specifically, we control for such characteristics as the mother's education, whether the family was on welfare, family income, whether the father is biological or stepfather, the age of the mother at birth, whether the father was in jail, and birth weight. These variables are measured in Wave I, when the individual was in high school. We retained individuals with missing data on control variables by creating binary categories for missing information.

The definitions and descriptive statistics of the variables are presented in Table 2. About nine percent indicated they had damaged property and 8 percent said they had assaulted somebody. About two percent committed robbery. The same is true for burglary. The proportion that committed theft is 3.3 percent, and the proportion that sold illicit drugs is 7.4 percent. More than 17 percent of our sample indicated that they had committed either burglary, theft, robbery, assault, or damaged property during the past 12 months. Mocan and Tekin (2005, 2006) show that rates of risky behaviors reported in

¹¹ Currie and Moretti (2005) document strong inter-generational correlations in birth weight, and show that birth weight is an indicator of future income. Similarly, Black, Devereux and Salvanes (2005) show that within-twin estimates reveal long-run effects of birth weight on outcomes such as earnings and education. Thus, we include the birth weight of the individual to account for a measure of health at birth, which may be correlated with future socio-economic status.

Add Health, such as crime and illicit drug use are comparable to those in other national sources, and Mocan and Rees (2005) demonstrate that the extent of juvenile crime calculated from Add Health is similar to those obtained from other sources. The means for other covariates are presented at the bottom panel of Table 2 and are also largely consistent with those usually found in other studies.

IV. Results

Table 3 presents the results pertaining to the relationship between attractiveness and criminal behavior for females and males separately. The reported coefficients are obtained from linear probability models. Robust standard errors are in parentheses. Estimation of logit models generated similar results. The table displays the results from three specifications. Model (I) includes no control variables. Model (II) includes personal characteristics of the individual in addition to the level of beauty, which are age, race, Hispanic ethnicity, birthweight, nonwage income, health status, religious affiliation, and whether the person was born in the U.S. Model (III) contains the same explanatory variables as Model (II), but it also includes family socio-economic background characteristics which are family income when the individual was in high school, whether parents were receiving welfare, mother's education, whether the father was biological, step father, or absent, mother's age at birth, and whether father was ever jailed. In each model only the coefficients of two beauty dummies (*Very Attractive* and *Unattractive*) are reported. The models do not include deterrence variables such as the arrest rates or the size of the police force because we have no information on the geographic location of the individuals in the data. However, the extent of the beauty of the individual and the

level of deterrence in his/her locality should be uncorrelated. Therefore, the omission of deterrence variables does not bias the estimated coefficients of beauty variables. By comparing models with and without personal and socio-economic background characteristics, we will be able to investigate the extent to which the relationship between attractiveness and criminal outcomes is affected by the inclusion of detailed controls for observable characteristics.

One concern is that each interviewer may have a different standard for beauty. To the extent that these differing standards are correlated with the respondents' criminal behavior, our estimates may be biased. To guard against this potential problem, models II and III are estimated using interviewer-specific fixed effects in addition to the set of controls described above.

A number of aspects of Table 3 are noteworthy. First, the estimated coefficients are of the expected sign in overwhelming majority of the cases. For example, in case of females, the coefficient of *Very Attractive* is negative in 6 of 7 crime measures. Similarly, the coefficient of *Unattractive* is positive in 6 of 7 cases. For males, all of the coefficients are of expected signs in models with control variables. Second, the estimated coefficients are stable across specifications. Put differently, inclusion of personal characteristics (Model II) and personal and family characteristics (Model III) does not change the magnitude of the estimated beauty effects. This indicates that the measure of beauty is uncorrelated with personal or family attributes.

While the results lend support to theoretical expectations, not all the coefficients are statistically significant at conventional levels. This is not surprising given that crime is a rare outcome in the data. In case of females, beauty has a statistically significant

impact on all crimes but theft and burglary. Being a very attractive female reduces the propensity to damage property by 1.1 percentage points, to commit non-drug crime (burglary, theft, robbery, assault, or property damage) by 2.5 percentage points, and the propensity to assault somebody by 2 percentage points in comparison to being of average attractiveness in the most comprehensive model (III). The coefficient is not quite significant ($p=0.11$) in case of burglary. Being an unattractive female increases the propensity for robbery by 1.5 percentage points, the propensity to assault by 2.2 percentage points, and selling drugs by 3 percentage points. For males, we observe that the coefficients of *Very Attractive* are always negative in the most comprehensive model (Model III), and the coefficients of *Unattractive* are always positive once the models include interviewer fixed-effects, although the coefficients are estimated with less precision. The finding that the effect of beauty is stronger for females is consistent with the results reported by Hamermesh and Biddle (1994), who show that unattractive females have lower labor force participation rates, and unattractive females marry badly. Specifically, all else the same, the husbands of unattractive females have less education. Thus, unattractive females likely face a lower opportunity cost of crime that would induce them towards criminal activity.

Physical attractiveness of the young adult may be correlated with family income. For example, one can argue that individuals from low income families may have worse features such as bad teeth. In our case, these concerns are minimized because inclusion of a host of family socio-economic characteristics does not influence the estimated coefficients, suggesting that beauty is not capturing family background. We provide

more evidence on robustness of the results and exogeneity of beauty in the extensions section below.

Because the hypothesis of sorting to the criminal sector is based on expected monetary payoffs in labor and criminal markets, a natural question is why assaulting somebody and damaging property are influenced by beauty. If these acts generate utility to the individual as the economic theory suggests, and if less attractive individuals have less to lose in the legal labor market in the present and in the future should they be apprehended, then it follows that beauty will have an effect on these crimes as well.¹²

Alternative Specifications and Robustness Tests

An alternative method to categorize beauty is to use the four-way classification, as described earlier. The results from this specification of attractiveness are presented in Table 4, and are consistent with those in Table 3. As in Table 3, in overwhelming majority of the cases the coefficients are of expected sign. An interesting finding in this table is that in a vast majority of the crime measures, the relative magnitude of the effects of *Very Attractive* and *Attractive* strengthens the evidence that attractive individuals sort themselves out of the criminal sector. Specifically, the absolute value of the coefficients of *Very Attractive* are larger than those of *Attractive*, indicating that attractive individuals commit less crime in comparison to those with average attractiveness (the left-out category), and very attractive individuals commit less crime in comparison to attractive ones. Consistent with Table 3, the effect of attractiveness on criminal behavior is found

¹² Also, individuals who commit assault or property damage tend to engage in other crimes as well. Thus, assault and damaging property are highly correlated with other crimes. For example, among those individuals who commit assault, the mean of robbery incident is 0.12, the mean of burglary is 0.08, the mean of theft is 0.10, and that of selling drugs is 0.22. In contrast, the corresponding means among those who have not committed an assault are: 0.01, 0.01, 0.03, and 0.06, respectively. The same is true for damaging property. Among those who damaged property, the means of committing robbery, burglary, theft, and selling drugs are 0.11, 0.12, 0.18, and 0.25. The corresponding means among those who have not damaged property are 0.01, 0.01, 0.02 and 0.09, respectively.

to be weaker for males, but the directions of the effects are mostly consistent with our predictions.

As an alternative analysis, we used all three beauty ratings assigned to the individuals in the three waves of the survey, and added up these three ratings. Thus, an individual's total beauty rating after three evaluations can range from 3 (being rated 1 in each case) to 15 (being rated 5 in each case). We classified individuals into three categories: Very attractive (if total rating is greater than or equal to 14), Unattractive (if the total rating is less than or equal to 9) and Average (if total rating is between 10 and 13).

The results of this specification are reported in Table 5. They are consistent with those reported in Table 3, but here beauty has no impact on robbery for females, and it has no impact on theft for males. On the other hand, the coefficients of both Very Attractive and Unattractive, which were not quite significant for males in Table 3, become statistically significant in this specification. In Table 5, very attractive females are about 2 percentage points less likely to damage property, and 0.5 percentage points less likely to burglarize in comparison to average-looking ones. Unattractive females are 1.4 percentage points more likely to damage property, 1.8 percentage points more likely to assault somebody, and about 1 percentage point more likely to sell drugs, and 2.8 percentage points more likely to commit non-drug crime. In case of males, unattractive individuals are about 1 percentage point more likely to commit robbery, and 1.7 percentage points more likely to sell drugs in comparison to average-looking males.

Very attractive males are 4 percentage points less likely to sell drugs. These magnitudes are very similar to those reported in Table 3, which were based on Wave III data.¹³

The results presented in Tables 3, 4 and 5 indicate that unattractive individuals are more likely to commit crimes, and attractive individuals are less likely to commit crimes in comparison to average-looking individuals. The results are robust to a variety of specifications. Beauty seems to be measured rather consistently as there is a high degree of agreement between beauty ratings provided for individuals by different evaluators over three evaluations, where the first and last one were six years apart.¹⁴

One legitimate concern is that each interviewer might have a different standard for beauty. As Hamermesh and Biddle (1994) point out, these differences could be regarded as a source of measurement error, which would bias our estimates toward zero to the extent that interviewer standards are randomly correlated with the respondents' criminal propensities. Including interviewer fixed effects as we do throughout the paper, accounts for this potential confounding. It is also conceivable that male and female interviewers provided systematically different beauty ratings. A great majority of our interviewers (about 80 percent) are female, and when we estimated our models restricting

¹³ It is not feasible to analyze the impact of the change in beauty between high school and adult years on the change in crime between the same periods. There are two reasons for this. First, the ratings of beauty are, though not perfectly, highly correlated between time periods, thus first-differenced beauty ratings do not provide much information. Second, although we can take the difference in criminal activity between adult and high school periods, conceptually they are not quite comparable because adults presumably make the crime-work decision as a labor market choice in Wave III, but the decision to engage in crime in high school may have been done in a different framework.

¹⁴ Note that measurement error in a beauty variable would make it more difficult to obtain significant coefficients.

the sample to female interviewers only, the results remained essentially the same.¹⁵ A similar argument can be made for the differences in ratings between interviewers of different races. More than 77 percent of the interviewers are white. The results did not change when the models are re-estimated with white interviewers only. We also restricted the sample to white respondents who were rated by white interviewers. Estimating the models using this sub-sample did not alter the results in a systematic way. Despite the reduction in the sample size, the signs of all estimated coefficients remained the same. For females, although the impact of attractiveness on damaging property and robbery became insignificant, attractiveness became statistically significant in the burglary regression. For males, the coefficient of very attractive turned insignificant for robbery and theft, but it became significant in damage and burglary.

If less attractive individuals are more likely to engage in crime, and if these individuals are imprisoned quickly after high school, or if they drop out from the longitudinal survey for some other reason, our data set from Wave III (of young adults) will not include less attractive and more crime-prone individuals. However, a comparison of the beauty ratings of those who were observed in Wave I, but not since (those who dropped out of the sample), with those who were observed in Wave III demonstrated that both the means and the distributions of the beauty ratings are similar between these two groups. The same result is obtained by comparing those who were observed in Wave II, but not in Wave III, as well as those who were observed in wave I, but not in Wave II. Thus, we find that attrition is independent of beauty. Also, note that estimating the models using individuals who have non-missing beauty rating in all three

¹⁵ The distribution of ratings provided by female raters were as follows by order of category: 2.01%, 4.90%, 44.72%, 36.55%, and 11.83%. The ratings provided by male interviewers were distributed as: 1.61%, 5.73%, 50.25%, 33.33% and 9.07%.

waves (Table 5) and using a 4-way classification of beauty (Table 4) did not alter the results.

Although the beauty question explicitly asks the interviewer to rate the “physical attractiveness” of the individual, it is conceivable that individuals with a “bad attitude” during the interview were assigned lower ratings on their physical attractiveness. To control for such potential confounding, we added to the models a variable gauging the attractiveness of the personality. This variable is based on the question “how attractive is the personality of the respondent?” which was answered by the interviewer at the end of the interview. We created dichotomous variables to indicate if the respondent’s personality was rated as unattractive (mean=0.023), or as very unattractive (mean=0.013) by the interviewer. Adding these personality controls did not alter the results. Similarly, based on the question “How attractive is the respondent’s grooming?” we created a dummy variable for unattractive grooming (mean=0.058). Adding this grooming variable to the models did not change the results either.¹⁶

Another related issue is that some interviewers might have believed that certain respondents had not answered some questions truthfully even though, by design, the interviewers did not see any answers entered by the respondents. If the interviewer’s perception of the truthfulness of the respondent influenced the beauty rating of the respondent, and if truthfulness is correlated with how respondents answered questions about criminal behavior, the estimates might be biased. In addition to controlling for personality, we also utilized information about the perceived truthfulness of the respondents reported by the interviewers. This information is based on the question “In

¹⁶ It is unclear whether controlling for personality and groom are necessary. If a person’s personality and groom are affected by his/her beauty, adding these variables into the model would lead to over-controlling.

your opinion, was the respondent candid in his/her responses?” About 95 percent of the respondents were rated as candid in their answers by the respondents. When we limited our analysis to the sample of individuals who are labeled as candid, the current implications of the results became more precise despite a loss of about 700 observations. For example, the coefficient of very attractive on robbery for males became significant at the 5 percent level and the coefficient of very attractive of burglary for females became significant at the 10 percent level.

Another concern stems from the possibility that attractive individuals may be more likely to be confident than others (Mobius and Rosenblatt 2006) and confidence may be correlated with the criminal behavior of individuals. For example, if attractive people are more confident and confident people are more likely to report crime than others, then the estimates may be biased upwards. In order to guard against bias from this possibility, we used answers to the question “How confident are you of yourself?” and generated a binary indicator for confidence which takes on the value of one if the person was very confident and zero otherwise (moderately confident, slightly confident, not at all confident). About 47 percent of our sample is very confident of himself/herself according to this measure. There is not a clear pattern on criminal behavior by confidence in our sample. Among the crime measures that we examine, the proportion committing property damage and burglary is higher among confident individuals than others, while the proportion committing assault and any non-drug crime is lower among confident individuals. There is no statistical difference for robbery, theft, and selling drugs between confident individuals and others. Controlling for this variable in our empirical models did not change the results.

Obese individuals are likely to receive lower attractiveness ratings. Strictly speaking, obesity or body mass index (BMI) should not be controlled for in the regressions, because it is part of an individual's "physical attractiveness." Controlling for BMI would imply that attractiveness is measured by facial beauty.¹⁷ Nevertheless, using the measured height and weight of the individual, we created the BMI for each individual, and added a dummy variable to the models to indicate if the respondent's BMI is greater than or equal to 30, (the cutoff for obesity; mean=0.224). Again, the results remain unchanged.

One would argue that individuals with depression and other psychological problems are likely to pay less attention to their looks than others or they may look in a disturbed manner, which may be considered unattractive by the interviewers. It is also possible that these individuals are more likely to engage in risky behavior like crime. In order to test this possibility, we generated indicators for depression symptoms and suicidal behavior. In Wave III, the Add Health asks nine questions measuring the extent of depressive symptoms of individuals.¹⁸ Responses to the depressive symptoms questions include 0 (never or rarely), 1 (sometimes), 2 (a lot of time), and 3 (most of the time or all of the time). After summing up scores to these questions, we generated a dichotomous indicator that equals 1 if the individual's score places them at the 75th

¹⁷ This is clearly not the case in current popular culture, and the most recent evidence can be found in the TV show "Biggest Loser" on NBC, where 14 unattractive individuals –by their own declaration in some cases- were competing to lose weight. Every single contestant had beautiful facial features, but they were unattractive because of their obesity. Similarly, it was reported on NBC that when supermodel Tyra Banks wore a "fat suit" on the street, she faced laughter, stares and nasty comments (<http://abcnews.go.com/GMA/BeautySecrets/story?id=1280787>).

¹⁸ These questions are identical to those that are used in the standard Center for Epidemiological Scale for Depression (CES-D) (Radloff 1977), which is widely used in related literatures. The original CES-D measure contains 20 questions, so the Add Health measure is only a proxy of the CES-D index.

percentile or higher in the sample distribution and zero otherwise (Tekin and Markowitz 2005). This variable may capture elevated levels of depressive symptoms, but may not correspond to diagnosis of major depression. In order to proxy for the latter, we use a binary indicator for whether the individual ever thought seriously about committing suicide in the past 12 months. The inclusion of these variables in the models did not alter the results in any significant way.¹⁹

Is it an Income Effect?

The measure of beauty is unlikely to be effected by the extent of the criminal activity of the individual. Although it can be argued that committing property crime would increase income, which would in turn allow the individual to enhance his/her attractiveness through the consumption of beauty products, Hamermesh and Biddle (1994) show that such reverse causality is not crucial even in the context of wages and beauty; so it should be even less important in case of crime and beauty. Furthermore, in our case any such reverse causality would bias the result in the opposite direction detected in the paper.

Could beauty be picking up some other effect that is correlated with criminal activity? For example, if interviewers consistently rated poorer individuals as unattractive, then beauty would be acting as a proxy for poverty. Given that poverty is correlated with criminal activity, we might be picking up the impact of poverty on crime. Note that we control for a very large number of individual and socio-economic background variables, including personal unearned income, mother's education, whether the individual's family was on welfare, family income, whether the father was ever jailed,

¹⁹ These results are available from the authors upon request.

etc. Also note that adding to Model III all the personal and family attributes (listed in Table 2) did not alter the results in comparison to those obtained from models that omitted them, indicating that unobserved factors are not influencing the relationship between beauty and crime.

Although the models contain an exhaustive list of personal and family background characteristics (see Table 2), if interviewers consistently assigned higher beauty ratings to those individuals who live in high income, low crime neighborhoods and if these individuals have lower criminal propensities, beauty might be picking up this neighborhood effect. To account for this possibility, we estimated the most comprehensive models with the addition of county-specific contextual variables. These pertain to the county of residence when the individual was in high school. These additional variables are the proportion of population living in rural area in the county of the individual in 1990, population density (number of persons per sq. km) in 1990, proportion black in the county in 1990, proportion Hispanic in the county in 1990, median household income in the county in 1990, the unemployment rate in the county in 1990, the total crime rate per 100,000 population in county in 1993, the proportion voting democratic in the 1992 presidential election in the county, and proportion voting for Ross Perot in the 1992 presidential election in the county. Estimating the models with these variables did not alter the results. Alternatively, we added to the models county dummies to control county-level unobservables, which did not change the results either.

Extensions

Wages and Beauty

For the sorting mechanism to be effective, there should be a labor market premium to beauty as discussed in the introduction. Although earlier papers have demonstrated this effect, it is important to investigate its existence in this data set as well. We estimated models where the logarithm of hourly wages of the individuals are regressed on the same large set of explanatory variables and the beauty dummy variables. The results obtained from the third wave and the sample of all three waves with non-missing beauty ratings are displayed in Table 6. The coefficients are always consistent with sorting mechanism, and are always significant. More specifically, for females, the analysis of individuals in Wave III indicates that being very attractive is associated with a wage premium of 6.5 percent and being unattractive is associated with a wage penalty of 4.3 percent.

In the sample of individuals who received beauty ratings in all three waves (the lower panel of Table 6), beauty premium is 4.5 percent for females, and being unattractive is associated with a reduction in wages by 7 percent. For males, being very attractive commands a wage premium of 10.7 percent, and being unattractive is associated with a wage reduction of about 4 percent in the Wave III sample. In the sample of individuals with non-missing beauty rating in all three years, the male wage premium to being very attractive is 10.8 percent and the penalty for being unattractive is 7 percent. Thus, these results confirm that the findings of previous research (Hamermesh and Biddle 1994, Biddle and Hamermesh 1998) also hold in this sample of young adults.

Is there a human capital impact of beauty?

The positive impact of beauty on wages reported earlier and also identified in these data may reflect some unobserved factor that may be correlated with beauty. For example, it has been shown that good-looking people receive more attention at school (Bull and Rumsey 1988). Also, attractive individuals are considered more trustworthy (Wilson and Eckel 2005), and young adolescents' physical attractiveness is related to peer relations and academic performance (Lerner et al, 1990). Interestingly, good looking people receive more attention even from babies (Samuels and Elwy 1985). On the other hand, it can also be argued that unattractive students may devote themselves to studying because they may have difficulties in social aspects of schooling. The net impact of beauty on school outcomes, therefore, could be uncertain. Hamermesh and Parker (2005) find that better looking university instructors receive higher ratings from students within particular courses of a given department. However, their data do not allow for identification of whether this result emerges because students perceive better-looking instructors as better teachers, or better-looking instructors are indeed more productive.

During the third wave of the survey (when the individuals are in the age range of 18-26), they were given the adult version of the Peabody Vocabulary Test. Table 6 reports the results from the models where these test scores are explained by beauty and all other personal and family characteristics. As can be seen, very attractive females in Wave III (the top panel) score 3 percentage points higher in comparison to average-looking females, and unattractive females score 2.3 percentage points lower. In case of males, very attractive ones score 3.7 percentage points higher, and unattractive ones score

1.8 percentage points lower than average-looking males, although the latter impact is not significantly different from zero. The results from the sample of all three waves (lower panel of Table 6) are similar: the coefficients of being very attractive are positive and the ones for being unattractive are negative for both males and females, and they are all significant.

These findings are consistent with prior research which shows that attractiveness influences achievement and even psychological well-being (Umberson and Hughes 1987), and suggest a secondary mechanism through which beauty affects crime. If less attractive students face social and educational disadvantages in high school which hinder their human capital accumulation, then high school beauty would have an impact on current crime because it would act as a proxy for the extent and quality of human capital formation in high school. For example, there is research to indicate that attractive children receive more attention in the classroom than do unattractive children (Clifford and Walster 1973), and attractiveness influences perceptions of intellectual competence in both adults and children (Jackson, Hunter, and Hodge 1995).

To investigate the extent to which beauty in high school has an impact on current (adult) crime, we estimate models where current crime is explained by beauty in high school, conditioning on all other explanatory variables. To create a beauty rating for high school, we averaged the ratings assigned to individuals in Waves I and II (when they were in high school). The average of the two years' beauty ratings ranges from 1 to 5. Of the 11,567 individuals with non-missing beauty ratings in Waves I and II, 5.6 % received an average rating of 2.5, and 5.1% received an average rating of 5. Two dummy variables are created (*Very Attractive-High School*, and *Unattractive-High*

School) to identify these ratings, which are added as additional explanatory variables to model III.

The results, which are reported in the first panel of Table 7A for females, show that beauty in high school has a statistically significant effect on current criminal activity in the cases of damaging property, assault and non-drug crime, controlling for all other explanatory variables that are included in Model III. In the bottom panel of Table 7A we present the results of the models for females, where in addition to the complete set of explanatory variables measuring personal attributes and family background characteristics, beauty in high school as well as current beauty are included as additional explanatory variables. As explained earlier in the paper, beauty ratings that were assigned in high school and those that were assigned when the individuals were young adults are highly correlated, although they are assigned by different interviewers 7-8 years apart. The lower panel of Table 7A shows that, despite the high correlation between high school beauty and adult beauty, inclusion of adult beauty does not impact the magnitude or the statistical significance of the estimated coefficients of high school beauty. Furthermore, adult beauty has a separate effect on adult crime in five different crimes. Thus, even though beauty ratings are highly correlated between high school years and when the individuals are young adults, adult beauty and high school beauty have separate impacts on current crime for females, controlling for all other variables.

Table 7B displays the results for males. The top panel shows that high school beauty has an impact on current crime only in case of selling drugs, and the bottom panel demonstrates that adding current beauty does not eliminate this effect.

If high school beauty is indeed a proxy for the learning experience of the individual when in high school, then adding measures of high school learning environment would reduce the size of the coefficients of high school beauty. Tables 8A and 8B report the results of the models where in addition to all explanatory variables and current and high school beauty measures, six additional variables are included which aim to capture various aspects of the students' high school experience. These variables are the grade point average of the student in high school (in Wave I), whether they were suspended from school, expelled from school, whether they had problems with teachers, whether they had problems with other students, and whether they felt part of school.

Table 8A shows that in case of females, higher high school GPA is negatively correlated with current criminal activity. Suspension in high school, and problems with teachers increase the likelihood of current crime. Note that the models used in the bottom panel of Table 7A and the model in Table 8A are very similar; the only difference being the six additional high school environment variables that are included in the latter. Comparison of the bottom panel of Table 7A and Table 8A shows that inclusion of these high school variables reduces the magnitude of the estimated high school beauty effects, and eliminates the statistical significance of these high school attractiveness coefficients in cases of assault and non-drug crime. This suggests that the impact of high school beauty on current crime is due to the correlation between high school beauty and the variables that capture high school experience for females. The coefficients of current beauty remain significant; that is, adding high school environment variables does not influence the impact of current beauty on current crime.

Table 8B demonstrates that for males, GPA, suspension, having being expelled and problems with teachers are significant determinants of current crime, but inclusion of high school environment variables to the models does not reduce the estimated coefficients of high school beauty in a systematic and meaningful way. These results suggest that the extent of beauty in high school has an impact on human capital formation in high school for female students, while the same is not the case for male students.

V. Conclusion

It has been shown that beauty commands a wage premium in the labor market (Hamermesh and Biddle 1994). If crime is as a labor market activity where the individuals make decisions based on expected current and future payoffs from the criminal sector and the legal labor market, then on the margin less attractive individuals should engage in crime more frequently because they face a wage penalty in the legal labor market.

In this paper we use data from three waves of Add Health (a nationally representative data set of U.S. young adults, designed to provide information about risky behavior) to investigate the relationship between attractiveness and criminal activity of young adults, aged 18 to 26. Beauty ratings are assigned by interviewers on a scale from 1 to 5, and they are rather consistent between the ratings assigned by different interviewers in different years of the survey.

Being very attractive reduces the individual's propensity for criminal activity and being unattractive increases it for a number of crimes, ranging from burglary to selling drugs. The effect of beauty on crime is estimated with more precision for females than

for males. It has been shown by prior work that unattractive females have lower labor force participation rates, and have husbands who have less education (Hamermesh and Biddle 1994). Thus, unattractive females face additional labor- and marriage-market handicaps that translate into lower opportunity cost of crime, which would reinforce the beauty-crime connection.

Beauty could be related to socio-economic background characteristics. However, our analyses demonstrate that the estimated relationship between beauty and criminal activity is not because beauty is acting as a proxy for socio-economic status. This is because the results are insensitive to inclusion of a large number of personal and family characteristics ranging from income of the family when the individual was in high school to family's welfare participation; from whether the father was ever jailed to birth weight, to a variety of contextual variables measured at the county-level. Furthermore, the results are robust to a number of tests, such as classification of beauty, measurement of beauty by different interviewers in different years, inclusion/exclusion of explanatory variables, accounting for potential interviewer effects, inclusion of county-level contextual variables, and controlling for individual characteristics ranging from personality to emotional health and self-esteem.

For unattractive individuals to sort themselves into the criminal sector, they should face an earnings penalty in the legal labor market based on their looks. Consistent with prior research, we find that being a very attractive young adult is positively associated with wages and being unattractive is associated with a wage penalty. We also show that beauty is related to adult vocabulary test scores, which suggests the possibility that beauty may have an impact on human capital formation.

Recent research has shown that a student's height, and even a student's name, which sounds like it was given by uneducated parents, influence the student's human capital and skill formation during school. Height influences participation in club activities (Persico, Postlewaite and Silverman 2004), and names that signal lower socio-economic status generate lower teacher expectations (Figlio 2005). There is also an extensive psychology literature which shows that people prefer to interact with individuals who have attractive features, and attractive children receive more attention in the classroom than do unattractive children (Clifford and Walster 1973). Thus, it can be conjectured that looks influence human capital formation in school through the attention received from teachers, and interactions with other students. This would impact the learning experience of unattractive students, by adversely influencing their quantity and quality of schooling, although a counterbalancing argument can be made based on the assumption that unattractive students may devote themselves to studying as a defense mechanism.

We demonstrate that, especially for females, holding constant current beauty, high school beauty (pre-labor market beauty) has a separate impact on crime, and that high school beauty is correlated with variables that gauge various aspects of high school experience, such as GPA, suspension or having being expelled from school, and problems with teachers. Thus, high school beauty seems to act as a proxy for the extent and quality of human capital formation in high school.

Taken together, these results suggest two handicaps faced by unattractive individuals. First, a labor market penalty provides a direct incentive for unattractive individuals toward criminal activity. Second, the level of beauty in high school has an

effect on criminal propensity 7-8 years later, which seems to be due to the impact of the level of beauty in high school on human capital formation, although this second avenue seems to be effective for females only.

Table 1
The Distribution of Attractiveness
Among Young Adults (ages 18-26) in Wave III

Category	Full Sample	Males	Females
1) Very unattractive	1.94%	1.37%	2.44%
2) Unattractive	5.01%	5.22%	4.81%
3) About average	45.87%	51.82%	40.55%
4) Attractive	35.96%	33.66%	38.00%
5) Very attractive	11.23%	7.92%	14.19%
<i>N</i> :	15,179	7,159	8,020

Table 2
Definitions and Descriptive Statistics

Variable Name	Definition	Mean	Standard Error
<i>Crime Variables</i>			
Damage (N=15,006)	=1 if deliberately damaged property that belonged to someone else in the past 12 months, =0 otherwise	0.087	0.282
Burglary (N=15,052)	=1 if went into a house or building to steal something in the past 12 months, =0 otherwise	0.019	0.135
Robbery (15,049)	=1 if used or threatened to use a weapon to get something from someone else in the past 12 months, =0 otherwise	0.020	0.141
Theft (N=15,041)	=1 if stole something worth more than 50 dollars in the past 12 months, =0 otherwise	0.033	0.180
Assault (N=15,150)	=1 if pulled a knife on someone, shot someone, or badly hurt someone in the past 12 months, =0 otherwise	0.080	0.272
Selling Drugs (14,994)	=1 if sold marijuana or other drugs in the past 12 months, =0 otherwise	0.074	0.261
Non-drug Crime (N=15,069)	=1 if committed burglary, theft, robbery, assault or damaged property into past 12 months, =0 otherwise	0.174	0.379
<i>Labor Market and Human Capital Outcomes</i>			
Wage (N=9,641)	=hourly wage rate	10.646	7.008
PPVT percentile (N=14,634)	=Percentile ranking from the Add Health Peabody Picture Vocabulary test score	50.000	29.667
<i>Explanatory Variables</i>			
Age18 ^a	=1 if 18 years old, =0 otherwise	0.010	0.098
Age19	=1 if 19 years old, =0 otherwise	0.095	0.293
Age20	=1 if 20 years old, =0 otherwise	0.132	0.339
Age21	=1 if 21 years old, =0 otherwise	0.161	0.367
Age22	=1 if 22 years old, =0 otherwise	0.190	0.392
Age23	=1 if 23 years old, =0 otherwise	0.191	0.393
Age24	=1 if 24 years old, =0 otherwise	0.161	0.368

(Table 2 continued)

Age25	=1 if 25 years old, =0 otherwise	0.052	0.221
Age26	=1 if 26 years old =0 otherwise	0.009	0.093
Hispanic	=1 if hispanic ethnicity,=0 otherwise	0.163	0.369
Hispanic missing	=1 if ethnicity is missing, =0 otherwise	0.002	0.042
White	=1 if white, =0 otherwise	0.648	0.478
Black	=1 if Black, =0 otherwise	0.226	0.418
Other race ^a	=1 if other race, =0 otherwise	0.110	0.313
Race missing	=1 if race is missing, =0 otherwise	0.016	0.127
Nonwage1	=1 if nonwage income is negative or zero dollars, =0 otherwise	0.529	0.499
Nonwage2	=1 if nonwage income is between 0 and 5,000 dollars, =0 otherwise	0.298	0.458
Nonwage3	=1 if nonwage income is between 5,000 and 10,000 dollars, =0 otherwise	0.051	0.220
Nonwage4 ^a	=1 if nonwage income is more than 10,000 dollars, =0 otherwise	0.122	0.327
Nonwage missing	=1 if nonwage income is missing, =0 otherwise	0.069	0.254
Healthy	=1 if in good or better health, =0 otherwise	0.954	0.210
Healthy missing	=1 if health is missing, =0 otherwise	0.0001	0.011
USborn	=1 if born in the U.S., =0 otherwise	0.919	0.272
USborn missing	=1 if USborn is missing, =0 otherwise	0.0001	0.014
Catholic	=1 if religion is Catholic, =0 otherwise	0.251	0.433
Protestant	=1 if religion is Protestant, =0 otherwise	0.398	0.489
No Religion	=1 if believes in no religion, =0 otherwise	0.202	0.401
Other religion ^a	=1 if believes in other religion, =0 otherwise	0.134	0.341
Religion missing	=1 if religion is missing, =0 otherwise	0.016	0.125
Jailed Father	=1 if father was ever jailed, =0 otherwise	0.137	0.344
Jailed Father missing	=1 if Jailed Father is missing, =0 otherwise	0.070	0.256
Mother High-school – ^a	=1 if mother has less than high-school degree, =0 otherwise	0.144	0.351
Mother High-school	=1 if mother has high-school degree, =0 otherwise	0.316	0.465
Mother High-school+	=1 if mother had more than high-school degree, =0 otherwise	0.436	0.496
Mother education missing	=1 if mother's education is missing, =0 otherwise	0.104	0.305
Parental welfare	=1 if parents were receiving welfare during Wave I, =0 otherwise	0.075	0.265
Parental welfare missing	=1 if parental welfare is missing, =0 otherwise	0.141	0.348
Biological Father	=1 if biological father was present during Wave 1, =0 otherwise	0.582	0.493
Step Father	=1 if step father was present during Wave 1, =0 otherwise	0.109	0.311
Father absent	=1 if the father is absent during Wave 1, =0 otherwise	0.306	0.461

(Table 2 concluded)

Father information is missing ^a	=1 if the father information is missing during Wave 1, =0 otherwise	0.003	0.057
Mother's age at birth 1 ^a	=1 if mother's age at birth was less than 19, =0 otherwise	0.076	0.265
Mother's age at birth 2	=1 if mother's age at birth was between 20 and 30, =0 otherwise	0.514	0.500
Mother's age at birth 3	=1 if mother's age at birth was between 31 and 40, =0 otherwise	0.133	0.339
Mother's age at birth 4	=1 if mother's age at birth was 41 or more, =0 otherwise	0.006	0.079
Mother's age at birth missing	=1 if mother's age at birth was missing, =0 otherwise	0.271	0.445
Parental Income1 ^a	=1 if total parental income was less \$10,000, =0 otherwise	0.059	0.235
Parental Income 2	=1 if total parental income was between \$10,000 and \$25,000, =0 otherwise	0.159	0.366
Parental Income 3	=1 if total parental income was between \$25,000 and \$75,000, =0 otherwise	0.427	0.495
Parental Income 4	=1 if total parental income was between \$75,000 and \$125,000, =0 otherwise	0.091	0.287
Parental Income 5	=1 if total parental income was more than \$125,000, =0 otherwise	0.020	0.139
Parental Income missing	=1 if total parental income was missing, =0 otherwise	0.244	0.430
Birthweight1	=1 if birth weight was less than 1,500 grams, =0 otherwise	0.018	0.134
Birthweight2	=1 if birth weight was between 1,500 and 2,500 grams, =0 otherwise	0.074	0.262
Birthweight3 ^a	=1 if birth weight was more than 2,500 grams, =0 otherwise	0.725	0.447
Birthweight missing	=1 if birth weight is missing, =0 otherwise	0.183	0.386
Number of observations		15,179	

^a Omitted category.

Wave I pertains to 1994-1995, when the respondents were first surveyed while they were in high school.

Table 3

The Effect of Beauty on Crime, Wave III

		FEMALES						
		Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
I	Very Attractive	-0.013** (0.006)	-0.005* (0.002)	-0.0005 (0.003)	0.001 (0.005)	-0.023*** (0.005)	-0.031*** (0.009)	-0.004 (0.006)
	Unattractive	-0.005 (0.009)	0.007 (0.006)	0.017*** (0.007)	0.001 (0.006)	0.031*** (0.011)	0.019 (0.014)	0.029*** (0.011)
	Control Variables	No	No	No	No	No	No	No
	Interviewer Fixed Effects	No	No	No	No	No	No	No
II	Very Attractive	-0.012* (0.006)	-0.004 (0.003)	-0.0004 (0.003)	0.003 (0.005)	-0.021*** (0.005)	-0.026*** (0.009)	-0.005 (0.006)
	Unattractive	-0.006 (0.009)	0.008 (0.006)	0.015** (0.007)	0.003 (0.007)	0.022** (0.011)	0.012 (0.014)	0.029*** (0.011)
	Control Variables	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes
	Interviewer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
III	Very Attractive	-0.011* (0.006)	-0.005 (0.003)	-0.0002 (0.003)	0.003 (0.005)	-0.020*** (0.005)	-0.025*** (0.009)	-0.006 (0.006)
	Unattractive	-0.006 (0.009)	0.008 (0.006)	0.015** (0.007)	0.004 (0.007)	0.022** (0.011)	0.012 (0.014)	0.030*** (0.011)
	Control Variables	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES
	Interviewer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations		7,959	7,976	7,974	7,974	8,003	7,966	7,960

Table 3 (concluded)

		MALES						
		Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
I	Very Attractive	-0.006 (0.015)	0.001 (0.007)	-0.011* (0.006)	-0.004 (0.009)	-0.009 (0.014)	-0.009 (0.019)	-0.022* (0.013)
	Unattractive	0.013 (0.017)	0.009 (0.009)	0.023** (0.011)	0.031** (0.013)	0.023 (0.017)	0.036* (0.022)	0.017 (0.016)
	Control Variables	No	No	No	No	No	No	No
	Interviewer Fixed Effects	No	No	No	No	No	No	No
II	Very Attractive	-0.002 (0.016)	-0.002 (0.008)	-0.012* (0.007)	-0.006 (0.010)	-0.012 (0.014)	-0.012 (0.020)	-0.023 (0.014)
	Unattractive	0.011 (0.019)	0.001 (0.009)	0.023** (0.011)	0.025* (0.013)	0.010 (0.018)	0.019 (0.023)	0.005 (0.017)
	Control Variables	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes
	Interviewer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
III	Very Attractive	-0.001 (0.016)	-0.001 (0.008)	-0.010 (0.007)	-0.006 (0.009)	-0.006 (0.014)	-0.006 (0.020)	-0.021 (0.014)
	Unattractive	0.012 (0.019)	0.001 (0.009)	0.023** (0.011)	0.024* (0.013)	0.005 (0.018)	0.017 (0.023)	0.004 (0.017)
	Control Variables	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES
	Interviewer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations		7,047	7,076	7,075	7,067	7,147	7,103	7,034

The number of observations remain the same between Models I, II, and III for each crime. Robust standard errors are in parentheses. A * indicates that the estimated coefficients is statistically different from zero at the 10% level, ** indicates significance at 5%, and *** stands for significance at 1% or better. Model I includes no control variables. Model II includes age, race, Hispanic ethnicity, nonwage income, health status, religious affiliation, and whether the person was born in the U.S. Model III contains the same explanatory variables as Model II, but it also includes family socio-economic background characteristics which are family income in 1994, mother's education, whether the father was biological, step father, or absent, mother's age at birth, whether father was ever jailed, whether parents were receiving welfare.

Table 4
The Effect of Beauty on Crime (Four-Way Classification of Beauty), Wave III

		FEMALES						
		Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
I	Very Attractive	-0.017*** (0.007)	-0.007*** (0.003)	-0.001 (0.003)	-0.002 (0.005)	-0.030*** (0.006)	-0.043*** (0.009)	-0.006 (0.006)
	Attractive	-0.008 (0.005)	-0.005** (0.003)	-0.001 (0.002)	-0.007** (0.003)	-0.015*** (0.005)	-0.025*** (0.008)	-0.003 (0.005)
	Unattractive	-0.009 (0.009)	0.005 (0.006)	0.016** (0.007)	-0.002 (0.007)	0.024** (0.011)	0.007 (0.015)	0.028*** (0.011)
	Control Variables	No	No	No	No	No	No	No
	Interviewer Fixed Effects	No	No	No	No	No	No	No
II	Very Attractive	-0.017** (0.007)	-0.007** (0.003)	-0.0007 (0.004)	-0.0002 (0.005)	-0.026*** (0.006)	-0.036*** (0.010)	-0.007 (0.007)
	Attractive	-0.010* (0.006)	-0.005* (0.003)	0.000 (0.003)	-0.006* (0.004)	-0.010* (0.005)	-0.019** (0.008)	-0.002 (0.005)
	Unattractive	-0.011 (0.009)	0.005 (0.006)	0.015** (0.007)	0.0002 (0.007)	0.018* (0.011)	0.003 (0.015)	0.028*** (0.011)
	Control Variables	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes
	Interviewer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
III	Very Attractive	-0.016** (0.007)	-0.007** (0.003)	0.0004 (0.004)	-0.0008 (0.005)	-0.025*** (0.006)	-0.034*** (0.010)	-0.007 (0.007)
	Attractive	-0.010* (0.006)	-0.005* (0.003)	0.0003 (0.003)	-0.007* (0.004)	-0.009* (0.005)	-0.018** (0.008)	-0.003 (0.005)
	Unattractive	-0.011 (0.009)	0.005 (0.006)	0.016** (0.007)	0.0005 (0.007)	0.018 (0.011)	0.003 (0.015)	0.028*** (0.011)
	Control Variables	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES
	Interviewer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations		7959	7976	7974	7974	8003	7966	7960

Table 4 (concluded)

		MALES						
		Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
I	Very Attractive	-0.004 (0.015)	-0.001 (0.008)	-0.012* (0.007)	-0.004 (0.009)	-0.011 (0.014)	-0.008 (0.020)	-0.027** (0.014)
	Attractive	0.005 (0.009)	-0.004 (0.004)	-0.003 (0.004)	-0.001 (0.006)	-0.003 (0.009)	0.001 (0.011)	-0.013 (0.008)
	Unattractive	0.015 (0.018)	0.007 (0.009)	0.022** (0.011)	0.031** (0.013)	0.021 (0.017)	0.036* (0.022)	0.012 (0.017)
	Control Variables	No	No	No	No	No	No	No
	Interviewer Fixed Effects	No	No	No	No	No	No	No
II	Very Attractive	-0.002 (0.017)	-0.004 (0.008)	-0.012* (0.007)	-0.007 (0.010)	-0.016 (0.015)	-0.014 (0.021)	-0.028** (0.015)
	Attractive	0.000 (0.010)	-0.004 (0.005)	-0.002 (0.005)	-0.003 (0.006)	-0.007 (0.009)	-0.005 (0.012)	-0.012 (0.009)
	Unattractive	0.011 (0.019)	-0.001 (0.010)	0.023** (0.012)	0.024* (0.013)	0.007 (0.018)	0.017 (0.024)	0.000 (0.017)
	Control Variables	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes
	Interviewer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
III	Very Attractive	-0.002 (0.017)	-0.004 (0.008)	-0.011 (0.007)	-0.008 (0.010)	-0.009 (0.015)	-0.009 (0.021)	-0.026* (0.015)
	Attractive	-0.002 (0.010)	-0.005 (0.005)	-0.001 (0.005)	-0.003 (0.006)	-0.005 (0.009)	-0.005 (0.012)	-0.013 (0.009)
	Unattractive	0.011 (0.019)	-0.001 (0.010)	0.022** (0.012)	0.023* (0.013)	0.003 (0.018)	0.015 (0.024)	-0.001 (0.017)
	Control Variables	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES	Personal Attr. and SES
	Interviewer Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations		7047	7076	7075	7067	7147	7103	7034

See notes to Table 3.

Table 5
The Effect of Beauty on Crime, Waves I, II and III (Individuals with no missing beauty information)^a

		FEMALES						
		Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
I	Very Attractive	-0.022*** (0.007)	-0.006* (0.003)	-0.005 (0.003)	-0.005 (0.006)	-0.002 (0.008)	-0.024* (0.013)	-0.008 (0.008)
	Unattractive	0.014** (0.007)	0.002 (0.003)	0.006* (0.004)	0.001 (0.005)	0.025*** (0.007)	0.035*** (0.010)	0.011* (0.006)
	Control Variables	No	No	No	No	No	No	No
II	Very Attractive	-0.019*** (0.007)	-0.005 (0.003)	-0.004 (0.003)	-0.004 (0.006)	0.001 (0.009)	-0.016 (0.012)	-0.007 (0.008)
	Unattractive	0.015** (0.007)	0.001 (0.003)	0.005 (0.004)	0.0004 (0.005)	0.020*** (0.007)	0.029*** (0.010)	0.011* (0.006)
	Control Variables	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes
III	Very Attractive	-0.020*** (0.007)	-0.005* (0.003)	-0.003 (0.003)	-0.004 (0.006)	0.001 (0.009)	-0.015 (0.012)	-0.007 (0.008)
	Unattractive	0.014** (0.007)	0.001 (0.003)	0.005 (0.004)	0.0003 (0.004)	0.018*** (0.007)	0.028*** (0.010)	0.011* (0.006)
	Control Variables	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes
No. of Observations		6,091	6,103	6,098	6,099	6,126	6,100	6,090

These models do not contain interviewer fixed effects, because being attractive and unattractive are determined by the sum of all three ratings assigned by different interviewers in three different waves.

See notes to Table 3.

Table 5 (concluded)
The Effect of Beauty on Crime, Waves I, II and III (Individuals with no missing beauty information)

		MALES						
		Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
I	Very Attractive	0.001 (0.031)	-0.003 (0.015)	0.003 (0.015)	-0.02 (0.015)	0.007 (0.029)	0.015 (0.039)	-0.045** (0.023)
	Unattractive	-0.009 (0.010)	-0.003 (0.005)	0.011** (0.005)	0.002 (0.006)	0.017* (0.010)	0.007 (0.013)	0.017* (0.010)
	Control Variables	No	No	No	No	No	No	No
II	Very Attractive	0.012 (0.031)	-0.0003 (0.015)	0.004 (0.015)	-0.016 (0.015)	0.011 (0.029)	0.025 (0.039)	-0.041* (0.023)
	Unattractive	-0.007 (0.010)	-0.003 (0.005)	0.009* (0.005)	0.001 (0.006)	0.014 (0.010)	0.005 (0.013)	0.015 (0.010)
	Control Variables	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes	Personal Attributes
III	Very Attractive	0.010 (0.031)	-0.002 (0.015)	0.003 (0.015)	-0.016 (0.015)	0.009 (0.029)	0.020 (0.038)	-0.040* (0.023)
	Unattractive	-0.003 (0.010)	-0.003 (0.005)	0.010* (0.005)	0.001 (0.006)	0.010 (0.010)	0.007 (0.013)	0.017* (0.010)
	Control Variables	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes
No. of Observations		5,335	5,354	5,355	5,350	5,400	5,369	5,329

These models do not contain interviewer fixed effects, because being attractive and unattractive are determined by the sum of all three ratings assigned by different interviewers in three different waves.

See notes to Table 3.

Table 6
The Effect of Beauty on Wages and Human Capital Indicators

Data set: Wave III				
	FEMALES		MALES	
	Log wages	Test Score	Log wages	Test Score
Very Attractive	0.065*** (0.014)	2.999*** (0.906)	0.107*** (0.024)	3.706*** (1.163)
Unattractive	-0.043** (0.020)	-2.330* (1.210)	-0.041* (0.025)	-1.800 (1.326)
Control Variables	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes
Interviewer Fixed Effects	Yes	Yes	Yes	Yes
Number of observations	4,896	7,753	4,745	6,881

Data set: Waves I-III using individuals with no missing beauty information ^b				
	FEMALES		MALES	
	Log wages	Test Score	Log wages	Test Score
Very Attractive	0.045*** (0.019)	2.340* (1.292)	0.108*** (0.040)	4.694** (2.374)
Unattractive	-0.070*** (0.014)	-3.900*** (0.850)	-0.070*** (0.014)	-3.726*** (0.791)
Control Variables	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes	Personal & Family Attributes
Number of observations	3,730	5,954	3,521	5,209

b: These models do not contain interviewer fixed effects, because being attractive and unattractive are determined by the sum of all three ratings assigned by different interviewers in three different waves.

Note: Robust standard errors are in parentheses.

Table 7A

The Effect of Current Beauty on Crime, Conditional on High School Beauty

FEMALES (n: 6,091-6126)

	Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
Very Attractive_High School	-0.022*** (0.008)	-0.006 (0.004)	-0.004 (0.004)	0.003 (0.008)	0.005 (0.010)	-0.009 (0.014)	-0.001 (0.011)
Unattractive_High School	0.018 (0.013)	-0.005 (0.005)	0.001 (0.005)	-0.008 (0.007)	0.026** (0.012)	0.040** (0.018)	0.016 (0.012)

	Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
Very Attractive	-0.018** (0.007)	-0.005 (0.003)	0.001 (0.004)	-0.001 (0.006)	-0.019*** (0.006)	-0.033*** (0.011)	-0.009 (0.007)
Unattractive	-0.007 (0.010)	0.007 (0.006)	0.017* (0.009)	-0.00004 (0.007)	0.024* (0.013)	0.010 (0.017)	0.035*** (0.013)
Very Attractive_High School	-0.019** (0.008)	-0.005 (0.004)	-0.003 (0.004)	0.003 (0.008)	0.009 (0.010)	-0.003 (0.014)	0.001 (0.011)
Unattractive_High School	0.018 (0.013)	-0.006 (0.005)	-0.0004 (0.005)	-0.008 (0.007)	0.023* (0.012)	0.038** (0.018)	0.012 (0.012)

These models include the complete list of personal and family background characteristics listed in Table 2, and included in models reported in Table 3.

Robust standard errors are in parentheses. A * indicates that the estimated coefficients is statistically different from zero at the 10% level, ** indicates significance at 5%, and *** stands for significance at 1% or better.

Table 7B

The Effect of Current Beauty on Crime Conditional on High School Beauty

MALES (n: 5,335-5400)

	Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
Very Attractive_High School	-0.024 (0.029)	-0.003 (0.013)	0.012 (0.015)	0.002 (0.018)	-0.023 (0.028)	-0.017 (0.038)	-0.054** (0.025)
Unattractive_High Sschool	0.012 (0.018)	-0.009 (0.008)	0.007 (0.009)	0.00008 (0.011)	0.009 (0.017)	0.005 (0.022)	-0.023 (0.016)

	Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
Very Attractive	-0.003 (0.019)	0.0005 (0.010)	-0.008 (0.008)	-0.011 (0.011)	-0.007 (0.017)	-0.006 (0.024)	-0.015 (0.017)
Unattractive	0.004 (0.022)	0.0004 (0.011)	0.021* (0.013)	0.026* (0.015)	0.011 (0.021)	0.017 (0.027)	-0.003 (0.020)
Very Attractive_High School	-0.024 (0.029)	-0.003 (0.013)	0.013 (0.015)	0.003 (0.018)	-0.023 (0.028)	-0.017 (0.038)	-0.053** (0.025)
Unattractive_High School	0.012 (0.018)	-0.009 (0.008)	0.004 (0.009)	-0.003 (0.011)	0.008 (0.017)	0.003 (0.022)	-0.024 (0.016)

These models include the complete list of personal and family background characteristics, listed in Table 2, and included in models reported in Table 3. Robust standard errors are in parentheses. A * indicates that the estimated coefficients is statistically different from zero at the 10% level, ** indicates significance at 5%, and *** stands for significance at 1% or better.

Table 8A
The Effect of Current Beauty on Crime Conditional on High School Beauty and Experience
 FEMALES (n: 6,091-6126)

	Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
Very Attractive	-0.016** (0.008)	-0.005 (0.003)	0.002 (0.004)	-0.0004 (0.006)	-0.017*** (0.006)	-0.029*** (0.011)	-0.007 (0.007)
Unattractive	-0.007 (0.011)	0.007 (0.007)	0.017* (0.009)	-0.001 (0.008)	0.016 (0.012)	0.001 (0.017)	0.035*** (0.013)
Very Attractive_High School	-0.017** (0.008)	-0.005 (0.004)	-0.002 (0.004)	0.003 (0.008)	0.012 (0.010)	0.003 (0.015)	0.004 (0.011)
Unattractive_High School	0.015 (0.013)	-0.006 (0.005)	-0.001 (0.006)	-0.009 (0.007)	0.014 (0.012)	0.024 (0.019)	0.013 (0.012)
GPA	-0.007* (0.004)	0.001 (0.002)	-0.003 (0.002)	0.003 (0.003)	-0.011*** (0.004)	-0.014** (0.006)	-0.004 (0.004)
Suspension	0.019** (0.009)	0.003 (0.004)	0.007 (0.005)	0.007 (0.006)	0.012 (0.009)	0.040*** (0.013)	0.013 (0.008)
Expelled	0.061*** (0.022)	0.024* (0.013)	0.021 (0.013)	0.018 (0.013)	0.050** (0.021)	0.102*** (0.029)	0.058*** (0.021)
Problems with teachers	0.011** (0.006)	0.003 (0.003)	0.002 (0.003)	0.005 (0.004)	0.008 (0.005)	0.025*** (0.008)	0.016*** (0.006)
Problems with other students	0.007 (0.006)	-0.00007 (0.003)	0.003 (0.003)	0.003 (0.004)	0.006 (0.005)	0.005 (0.008)	0.003 (0.005)
Felt part of school	0.007 (0.007)	0.007** (0.003)	-0.0003 (0.003)	0.005 (0.005)	0.007 (0.006)	0.009 (0.009)	0.004 (0.006)

These models include the complete list of personal and family background characteristics, listed in Table 2, and included in models reported in Table 3. The models are identical to those reported in the bottom panel of Table 8A, with the difference of the six high school variables listed in the table. Robust standard errors are in parentheses. A * indicates that the estimated coefficients is statistically different from zero at the 10% level, ** indicates significance at 5%, and *** stands for significance at 1% or better.

Table 8B
The Effect of Current Beauty on Crime Conditional on High School Beauty and Experience
 MALES (n: 5,335-5400)

	Damaging Property	Burglary	Robbery	Theft	Assault	Non-drug Crime	Selling Drugs
Very Attractive	-0.007 (0.019)	0.001 (0.010)	-0.007 (0.008)	-0.011 (0.011)	-0.004 (0.017)	-0.006 (0.024)	-0.014 (0.017)
Unattractive	0.008 (0.022)	0.004 (0.012)	0.021 (0.013)	0.030* (0.016)	0.013 (0.021)	0.028 (0.027)	-0.002 (0.020)
Very Attractive_HS	-0.021 (0.030)	-0.002 (0.014)	0.015 (0.015)	0.005 (0.018)	-0.016 (0.028)	-0.008 (0.039)	-0.046* (0.026)
Unattractive_HS	0.013 (0.018)	-0.012 (0.008)	-0.001 (0.009)	-0.006 (0.011)	0.001 (0.017)	0.003 (0.023)	-0.033** (0.016)
GPA	0.015** (0.006)	-0.004 (0.003)	-0.003 (0.003)	-0.001 (0.004)	-0.012** (0.006)	-0.001 (0.008)	-0.003 (0.006)
Suspension	-0.004 (0.012)	0.001 (0.006)	0.003 (0.006)	0.010 (0.008)	0.053*** (0.012)	0.035** (0.015)	0.038*** (0.012)
Expelled	0.044** (0.019)	0.019* (0.011)	0.040*** (0.012)	0.035*** (0.014)	0.110*** (0.021)	0.136*** (0.025)	0.101*** (0.020)
Problems with teachers	0.068*** (0.011)	0.013** (0.005)	0.006 (0.005)	0.019*** (0.007)	0.029*** (0.010)	0.083*** (0.014)	0.057*** (0.010)
Problems with other students	0.016 (0.011)	0.008 (0.006)	0.007 (0.005)	-0.013* (0.007)	-0.012 (0.010)	0.005 (0.014)	-0.009 (0.010)
Felt part of school	0.002 (0.012)	0.001 (0.006)	-0.006 (0.005)	0.003 (0.007)	0.008 (0.011)	0.001 (0.015)	-0.018* (0.011)

These models include the complete list of personal and family background characteristics, listed in Table 2, and included in models reported in Table 3.

The models are identical to those reported in the bottom panel of Table 8A, with the difference of the six high school variables listed in the table. Robust standard errors are in parentheses. A * indicates that the estimated coefficients is statistically different from zero at the 10% level, ** indicates significance at 5%, and *** stands for significance at 1% or better.

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