1. Women's attendance at sports events

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1.1 INTRODUCTION

Attending sports events is a major leisure activity in the United States. A 2004 study by the Performing Arts Research Coalition (PARC) reports that, on average, respondents attend sporting events seven times per year, choosing roughly an equal number of amateur and professional events (PARC, 2004). This compares with four visits to the performing arts and 15 to movies, clubs, and popular concerts, combined. The study notes some stereotypical differences between men and women. Men are more likely to go to sports events and clubs, while women more often attend the performing arts and the movies.

Although economists have not devoted much attention to the determinants of individual choices to attend sports, they have studied factors that affect decisions to attend the performing arts. One of the main findings of this research is that arts socialization and education are important determinants of attendance (Seaman, 2006). To fully enjoy the arts, one must have a certain level of understanding of the art form. We adapt this methodology to explore in some depth the impact of what we call 'sports capital' on sports attendance.

Enjoying sports, like appreciating the performing arts, requires some understanding of the performance in question. We use sports participation (playing some kind of sport) as a crude measure of sports capital. Our results show that women and men who play sports are much more likely to attend sporting events. Applying these findings to the declining difference between men's and women's attendance indicates that as much as a third of this decline can be attributed to increasing sports participation on the part of women.

Finally, we examine the impact of marriage on the sports attendance of women. Again adapting research from the economics of the arts, we argue that women married to men with sports capital are more likely to attend sports events. The same is true for men married to women with sports capital. This leads to a more complex understanding of the impact of marriage on attendance than that provided by game theory's battle of the sexes. Rather than attending a sporting event only because they prefer the company of their husband, it is possible that women are more likely

to attend sporting events when they acquire sports capital from their husband, which adds to their understanding and enjoyment of the event. The impact of sports capital does not, however, deny a role to the battle of the sexes, as we find that one spouse's attending more sports events leads the other spouse to attend more events as well, even when one controls for sports capital. However, the battle of the sexes occurs less frequently than might be presumed. Individuals engage in assortative mating, finding partners with similar sports interests. For those who are married to a partner with different sports capital, the attendance effects of the differences are quite large.

Our results show that women's choices are affected by the same factors that determine men's choices: age, education, and income. Specifically, younger, more-educated persons with higher incomes are more likely to attend sports. Overall, however, women are less likely to attend sporting events than are men. These demographic factors, though, explain little of the difference in men's and women's attendance.

The next section reviews the literature regarding attendance at sporting events. In Section 1.3 we construct an empirical model of attendance at sports events with particular attention to the impact of sports capital. Section 1.4 presents the dataset that we use, the Survey of Public Participation in the Arts (SPPA). It also contains an overview of men's and women's attendance at sports events, using data for 1992, 2002, and 2008 from the SPPA (National Endowment for the Arts, 1983–2008). In Section 1.5, we present our results. Not surprisingly, we find that women attend sports at lower rates than men, though the difference has declined substantially over time. We also find that both sports capital and the battle of the sexes play a role in sports attendance. Section 1.6 concludes.

1.2 PREVIOUS RESEARCH

Analyses of attendance at sports events seldom focus on gender. However, several studies employ national datasets to examine attendance and distinguish between male and female spectators. White and Wilson (1999) use Canadian data from the General Social Survey of 1992. Employing multiple classification analysis (MCA), they investigate the relationship of social class to spectatorship, holding age, language, and region constant. They find that the proportion of men in attendance at professional and amateur events was more than that for women and that income and education were significant predictors for both sexes.

Thrane (2001) uses data from three surveys conducted in 1996/97 by ACNielsen – one each for Denmark, Norway, and Sweden. He

employs multivariate logistic regression analysis to estimate the probability of annual sports attendance based on demographic variables, including gender and a measure of sports participation. Approximately two-thirds of the respondents in each country attend an amateur or professional sports event. Men are 18 percent more likely than women to be spectators in Sweden, 14 percent more likely in Denmark, and 11 percent more likely in Norway. The measure of sports participation is highly significant for each country.

Lera-López et al. (2011) investigate Spanish sports attendance. Fifty-five percent of their respondents were spectators at an amateur or professional event in 2006. Controlling for age, education, income and household characteristics, they find men approximately 19 percent more likely than women to attend a sporting event.

Montgomery and Robinson (2006 and 2010) use data for the United States from the Arts Participation Surveys completed in 2002 by PARC. In the first paper, we examine the relationship between attendance at arts, sports, and popular culture events and the demographic characteristics of various audiences. We find that attending amateur and professional sports are the closest substitutes for each other and that the two are both positively correlated with attending dance, theater, movies, rock concerts, live comedy, and nightclubs. Sports attendance had no relationship with attending orchestra or opera. Forty-three percent of those surveyed attended a combination of at least one sport, one performing art, and one popular cultural event in the survey year. Another 18 percent attended a sport and a popular cultural event, while 1 percent were in audiences for only sports and performing arts. In regressions that control for other demographic traits, the effect of gender on attendance varies widely among types of events. Women's attendance is larger at movies, theater, and dance, and men's is larger at rock concerts and night clubs. The biggest effects of gender are on sports attendance, with men attending 26 percent more professional contests and 17 percent more amateur contests.

In the second paper, we employ the same 2002 data to study differences in the behavior of single and married men and women. On average, women attended 2.4 professional sporting events, while men attended 4.3 events. For singles, the average was 2.3 a year for women and 4.4 for men. We estimated four separate Tobit models (for single and married women and men) that controlled for other demographic variables. Oaxaca decomposition results derived from these regressions show a positive marriage effect of between zero and 4 percent for women, and between 6 and 10 percent for men.

Sports economists tend to focus almost exclusively on total or average team attendance rather than the characteristics of individual

attendees at sporting events. Villar and Guerrero (2009) review over 80 empirical papers on attendance, all focused on some measure of total team attendance with only two that deal with women's attendance. Gauthier and Hansen (1993) study female spectators at professional golf tournaments. Respondents to their questionnaire said that seeing the best players and live action were important reasons for attending. Gauthier and Hansen also find that the respondents' age and the frequency with which they played the sport affected their likelihood of attending the event. Hofacre (1994) briefly considers why the indoor soccer audience is atypically female. One of several suggested reasons is that women have been very involved in the growth of youth soccer as players, coaches, and parents.

A few articles in psychology and sociology analyze audiences at particular athletic events. James and Ridinger (2002) ask a sample of those who attended four basketball games to rate themselves as fans of the game and of the teams involved and to answer a series of questions aimed at discovering their motivations for attending. They find that, although the most important motivations (action and escape) were the same for men and women, men reported stronger fan ratings and were significantly different from women in the importance of other motives. Schurr et al. (1988) examine the characteristics of sophomores who did and did not attend two Ball State basketball games. As part of their study, they cross-tabulate personality and demographic traits with attendance. They find that women are less likely to attend than men. Men with business-oriented majors are the most likely to attend, while women from other majors are the least likely to do so.

1.3 A MODEL OF SPORTS ATTENDANCE

We begin with a standard neoclassical utility-maximization model. Consumers make sports attendance decisions based on their preferences, conditional on income and prices. Both income and time constraints are relevant for sports attendance. Because the dataset we employ has data only for whether one attended a sports event, our dependent variable is a dummy variable (ATT_i) equal to 1 if the respondent attended a sports event, at least one athletic event. On the right-hand side, we include income (Y_i) and a number of demographic variables designed to measure preferences and tastes, many of which are included in previous studies. We are particularly interested in the impact of gender (GEN_i) on attendance, so we express it separately from the other demographic variables (X_i) in equation (1.1):

Table 1.1 Sports attendance by men and women, 1992 to 2008 (%)

	Men	Women	Difference
	Attend	Attend	
SPPA			
1992	44.1	29.2	14.9
2002	39.7	28.7	11.0
2008	35.5	27.7	7.8
PARC			
2002	53.2	46.8	6.4

$$ATT_i = \beta_0 + \beta_1 Y_i + \beta_2 GEN_i + \gamma' X_i + \varepsilon_i \quad (1.1)$$

Because we expect sporting events to be normal goods, the pure income effect should be positive. However, higher incomes are frequently associated with higher hourly pay, which increases the opportunity cost of leisure. From the aggregate data and previous research, we expect to find that, all else equal, women are less likely to attend sports than men. This is consistent with data from the SPPA, as seen in Table 1.1.

The vector of demographic variables includes controls for age, education, urban residence, race, and marital status. Lera-López et al. (2011) report that age has generally been found to have a negative or insignificant impact on attendance. Also following Lera-López et al., we include education. We want to know whether college graduates have higher sports attendance given the prominence of intercollegiate sports in the United States. We include an urban/rural status dummy variable primarily as a control on the supply of sports because it is likely that there is a greater availability of events in urban areas. We also include a dummy variable equal to one if the respondent is white to see if race affects sports attendance. Finally, in our base model we control for marital status. We refine this set of controls in the next subsection.

1.3.1 'Sports Capital' and Attendance at Sports Events

In many ways, sports should mirror the arts. Seaman suggests that supply factors that have been listed for the performing arts, '(1) liveliness, (2) joint audience-performer presence, and (3) concern for the skilled presentation of created works with the labor contribution being the essential feature of the final product', could describe sports activities (Seaman, 2003, 82). The venues and experiences are quite similar in sports and the arts, so,

Table 1.2 Sports attendance by sports participation (total, male and female)

	Total		Male		Female	
	Participate	Don't participate	Participate	Don't participate	Participate	Don't participate
1992	59.8	21.3	64.5	24.2	53.6	19.6
2002	64.1	20.9	66.6	23.2	60.8	19.5
2008	59.7	21.4	62.6	22.1	55.5	20.8

Table 1.3 Men and women participating in sports, 1982 to 2008 (%)

	Men	Women	Difference
1982	48.9	31.3	17.6
1985	50.3	31.1	19.1
1992	49.2	28.3	20.8
2002	38.1	22.4	15.7
2008	33.3	20.1	13.1

analogous to the arts, the pleasure received from watching a sporting event may depend on one's knowledge of the sport. Being able to identify a strikeout, home run, base hit, or an error and knowing its significance are instrumental to the enjoyment of baseball. Upright (2004) calls knowledge of the arts 'cultural capital'. We adapt his language and study the impact of a person's sports capital. Sports capital is the acquired knowledge that allows one to fully enjoy attendance at sporting events. We expect sports capital to be an important determinant of sports attendance.

In the arts literature, childhood or adolescent training in the arts is typically used as a proxy for cultural capital. While we do not have similar data on the sports activities of one's youth, we believe that current, active participation in sports is a good proxy. Fortunately, the SPPA includes a question about such activity: 'During the last 12 months, did you participate in any sports activity, such as softball, basketball, golf, bowling, skiing, or tennis?'. Table 1.2 shows the relationship between sports participation and sports attendance. In 2008, 60 percent of those who participated in sports also attended sports events. In contrast, only 21 percent of those who did not engage in sports attended a sports event. Similar results are found for other years for both men and women. However, Table 1.3 shows that men have much more sports capital than women. Individuals' sports participation can be viewed as their investment in sports. Playing,

even at an amateur level, can increase appreciation and understanding for spectators. In order to explore the impact of sports capital on sports attendance more fully we expand our base model by adding a dummy variable for sports capital ($SCAP_i$) to equation (1.1):

$$ATT_i = \beta_0 + \beta_1 Y_i + \beta_2 GEN_i + \beta_3 SCAP_i + \gamma' X_i + \varepsilon_i. \quad (1.1a)$$

1.3.2 Marriage and Attendance at Sports Events by Women

In previous research using the PARC data, we document that married women attend more sporting events than single women (Montgomery and Robinson, 2010). We posit two reasons why marriage affects the attendance of women. The 'Battle of the Sexes' is a standard game-theoretic approach to a situation in which each player would like to coordinate his or her behavior, but the payoffs to each player differ across choices. In a common, eponymous version of this game, the players are a married couple who would like to attend either a sporting or an arts event together. However, the husband's payoff is higher from sports and the wife's is higher from the arts. Since we have seen that men attend more sports events than women, this situation is likely to be relevant. One possible solution to this type of game is a variant of the tit-for-tat strategy, in which the agents take turns attending sports and art events. (This solution is not without its flaws, as Woody Allen makes clear in *Manhattan Murder Mystery* when he leaves the opera early after making Diane Keaton sit through a hockey game.) If this is the solution adopted by many or all of the married couples, we might observe that marriage has a positive impact on the sports attendance of women while lowering that of men.

The second way in which marriage affects sports attendance is through the sports capital of one's spouse. This approach was adopted by Upright (2004) in analyzing the effect of one spouse's art knowledge on the art attendance of the other. We expect spouses who have no playing experience to learn and gain sports capital from those who are active players and therefore attend more sporting events. Because we have seen that men have more sports capital than women, this might be more important for married women than for married men. Attendance patterns, however, may result from household maximizing decisions that combine the now-enhanced combined sports capital of the couple with the battle of the sexes. In this case, the attendance of the partners with more sports capital may decrease at the same time that the attendance of their spouses increases. This implies that our model must control for whether both, one, or none of the marriage partners has sports capital. In this specification, the sports capital variable, $SCAP_p$, now indicates the presence of sports capital

for an unmarried individual. Married couples have a series of dummy variables that show whether the husband ($SCAP_i^H$), wife ($SCAP_i^W$), or both ($SCAP_i^B$) have sports capital. This transforms equation (1.1a) into:

$$ATT_i = \beta_0 + \beta_1 Y_i + \beta_2 GEN_i + \beta_3 SCAP_i + \beta_4 SCAP_i^H + \beta_5 SCAP_i^W + \beta_6 SCAP_i^B + \gamma' X_i + \epsilon_i. \quad (1.2)$$

In regressions that use data for only men or women, we delete the gender variable (GEN_i).

1.4 DATA

We use the SPPA (National Endowment for the Arts, 1983–2008), which is conducted periodically as an add-on to other US government surveys. In addition to providing standard demographic data, the survey asks respondents whether, with the exception of youth sports, they attended professional or amateur sports events during the previous 12 months. Unfortunately, prior to 1992, the sports attendance question did not exclude youth sports, so we focus on the surveys from 1992, 2002 and 2008. The survey conducted in 1997 had very few questions on demographic characteristics so we cannot use its data to estimate our models.

1.4.1 Women's Attendance at Sporting Events

As noted earlier, Table 1.1 shows SPPA data on the proportion of men and women attending sports events from 1992 to 2008 and PARC data on attendance at professional sports events from the 2002 survey. Not surprisingly, women attend sports events at lower rates than men. In the 2008 SPPA, 36 percent of men report attending sports events, compared to only 28 percent of women. It is likely that the difference in average number of events attended is greater than the difference in the percent of individuals attending at least one event. (In the PARC data, men attend four professional sporting events a year, while women attend only two.) Throughout this period, the percentage of both men and women attending sports events declines. However, the decline for women is substantially smaller. As a result, the gap in the percentage of male and female attendance declines by nearly 50 percent between 1992 and 2008.

While we do not have data to determine the cause of this convergence, we can speculate about two possibilities. Title IX, passed in 1972, has increased women's sports opportunities at the high-school and collegiate levels. This greater access to sports may have increased relative female

Table 1.4 Sports attendance by sex and marital status (%)

	Men		Women		Difference	
	Single	Married	Single	Married	Single	Married
1992	49.3	41.3	26.0	31.7	23.3	9.6
2002	40.6	39.2	26.5	30.6	14.1	8.6
2008	35.1	35.8	24.8	30.1	10.3	5.7

interest in attending other sports events. Second, the large rise in popularity of women's professional and collegiate sports over this time period may have increased the relative attendance of women. Examination of overall attendance, however, tells us little about why men and women attend sports at different rates and whether this difference can be explained by other demographic characteristics.

1.4.2 Marriage and Attendance at Sporting Events

Table 1.4 reports sports attendance of men and women by marital status. Consistent with our previous research, the data show that married women attend more sports events than single women, while married men attend fewer events in two of the three years for which we have data. Table 1.4 also shows that there is considerable convergence in men's and women's sports attendance for married men and women. In 2008, the single male/female difference in attendance is 10.3 percentage points, while the married male/female difference is a little more than half as large, at 5.7 percentage points. We have reported similar results using PARC data (Montgomery and Robinson, 2006). Aggregate data, however, fail to account for the sports capital in marriage.

In order to study the role of sports capital more closely, we use couples in the SPPA data to determine the sports attendance and sports activity of each person's spouse for the 2002 SPPA. To construct this dataset for married couples, we identify the reference person for each household and then match that person with his/her spouse. In order to facilitate comparisons with single individuals, our dataset contains all the respondents who were reference persons, whether single or married. It is less nationally representative than the full SPPA dataset used to construct our earlier tables because that includes all individuals.

Using these data, we identify six different types of family structures, four for married partners and two for single individuals. Couples can be in marriages in which one, both, or neither of the partners has sports

Table 1.5 Sports attendance for men and women, by marital status and own and spouse's sports capital (%)*

Marital status/sports capital	Men attending	Women attending
Single/none	19.6	20.3
Single/yes	71.4	67.5
Married/both	67.5	62.8
Married/male only	63.4	42.0
Married/female only	40.8	52.0
Married/neither	22.5	15.4

Note: * Sports capital defined as playing a sport.

capital. We distinguish between couples in which only the man and only the woman has sports capital. Single individuals make up the final two household types based on whether they have or do not have sports capital. Table 1.5 compares couples and singles with and without sports capital. Only 20 percent of both single women and single men without sports capital attend sports, while 68 percent of single women and 71 percent of single men with sports capital attend. Men and women who engage in sports when married to a spouse who also participates have almost as high rates of attendance as singles who participate in sports. The attendance patterns of individuals whose spouse differs in sports capital are less extreme than those of single persons. The spouse without sports capital is more likely to attend than a single person without sports capital and the spouse with sports capital is less likely to attend than a single person with sports capital. Only 20 percent of single women without sports capital go to sporting events (as noted above), but 42 percent of those married to a man with it do. In contrast, 68 percent of single women with sports capital attend sporting events, but only 52 percent of those whose partner lacks it do. In the final version of the model we include a series of dummy variables for the type of family in terms of sports capital.

1.5 ECONOMETRIC RESULTS

Table 1.6 reports the marginal effects for probit estimation of equation (1.1a) using data from the SPPA for 1992, 2002, and 2008. We find that age lowers the probability of attendance for both men and women but that the probability increases with income and education. The probability increases for men and women for each income class beyond \$24,000 a year.

Table 1.6 SPPA regressions controlling for sports capital (marginal effects)

Variables	1992			2002			2008		
	Both	Female	Male	Both	Female	Male	Both	Female	Male
Age 18 to 24	0.272*** (0.032)	0.309*** (0.043)	0.204*** (0.048)	0.182*** (0.020)	0.236*** (0.027)	0.115*** (0.030)	0.158*** (0.025)	0.160*** (0.033)	0.158*** (0.039)
Age 24 to 34	0.241*** (0.026)	0.244*** (0.036)	0.220*** (0.039)	0.153*** (0.016)	0.197*** (0.022)	0.102*** (0.024)	0.122*** (0.020)	0.127*** (0.027)	0.122*** (0.031)
Age 35 to 44	0.191*** (0.027)	0.232*** (0.036)	0.126*** (0.039)	0.138*** (0.016)	0.176*** (0.022)	0.0963*** (0.023)	0.114*** (0.020)	0.114*** (0.027)	0.115*** (0.029)
Age 45 to 54	0.127*** (0.029)	0.146*** (0.039)	0.0939** (0.043)	0.0868*** (0.016)	0.117*** (0.022)	0.0544** (0.023)	0.0869*** (0.019)	0.105*** (0.026)	0.0678** (0.029)
Age 55 to 64	0.0647** (0.030)	0.116*** (0.040)	-0.00459 (0.046)	0.0477*** (0.017)	0.109*** (0.024)	-0.0195 (0.025)	0.0449** (0.020)	0.0559** (0.026)	0.0332 (0.030)
Income 25 to 49	0.0920*** (0.017)	0.0694*** (0.022)	0.112*** (0.027)	0.0713*** (0.013)	0.0741*** (0.016)	0.0647*** (0.020)	0.101*** (0.017)	0.0978*** (0.022)	0.104*** (0.027)
Income 50 to 74	0.135*** (0.026)	0.124*** (0.034)	0.139*** (0.039)	0.174*** (0.015)	0.164*** (0.020)	0.180*** (0.022)	0.177*** (0.019)	0.150*** (0.026)	0.208*** (0.029)
Income 75 up	0.196*** (0.032)	0.172*** (0.043)	0.207*** (0.045)	0.213*** (0.015)	0.220*** (0.020)	0.201*** (0.022)	0.228*** (0.019)	0.211*** (0.025)	0.248*** (0.028)
White	0.0624*** (0.021)	0.0741*** (0.023)	0.0354 (0.036)	0.111*** (0.012)	0.120*** (0.014)	0.0918*** (0.019)	0.0488*** (0.014)	0.0711*** (0.018)	0.0187 (0.023)
Married	-0.00968 (0.016)	0.0121 (0.020)	-0.0463* (0.026)	-0.0291*** (0.010)	-0.0361*** (0.012)	-0.0311** (0.015)	-0.0285** (0.012)	-0.0284* (0.015)	-0.0277 (0.018)
Urban	0.0426*** (0.016)	0.0178 (0.019)	0.0705*** (0.025)	0.0630*** (0.010)	0.0386*** (0.013)	0.0903*** (0.015)	0.0362*** (0.012)	0.0316** (0.016)	0.0408** (0.019)

Table 1.6 (continued)

Variables	1992			2002			2008		
	Both	Female	Male	Both	Female	Male	Both	Female	Male
Some College	0.0886*** (0.019)	0.104*** (0.023)	0.0594** (0.030)	0.0528*** (0.016)	0.0514*** (0.019)	0.0475* (0.025)	0.0614*** (0.019)	0.0627*** (0.024)	0.0566* (0.030)
College	0.107*** (0.023)	0.0969*** (0.030)	0.110*** (0.035)	0.0962*** (0.012)	0.0816*** (0.016)	0.107*** (0.018)	0.118*** (0.015)	0.0920*** (0.019)	0.149*** (0.022)
Graduate	0.0857*** -(0.0268)	0.102*** -(0.0366)	0.0690* -(0.0393)	0.0689*** -(0.0158)	0.0536** -(0.0209)	0.0797*** -(0.0232)	0.0987*** -(0.0193)	0.103*** -(0.0266)	0.0928*** -(0.0281)
Sports Participant	0.282*** (0.015)	0.249*** (0.021)	0.317*** (0.022)	0.337*** (0.009)	0.318*** (0.014)	0.356*** (0.013)	0.296*** (0.012)	0.261*** (0.018)	0.326*** (0.017)
Female	-0.0855*** (0.014)			-0.0558*** (0.009)			-0.0299*** (0.010)		
Observations	5,223	2,948	2,275	14,508	7,908	6,600	9,026	4,795	4,231

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Some college, a college degree, and graduate study all increase the likelihood of attendance. For men, a college education has the largest effect of the educational variables. Because we control for income, we suspect that the impact of college attendance reflects the high value placed on athletics in the collegiate setting. Marriage generally has a negative effect on the attendance of both men and women.

The estimated marginal effects of sports capital are very large. Overall, sports participation increases attendance by about 30 percent, even after controlling for age, education, income and the other demographic variables. Table 1.6 also shows the marginal effects of being female, which decreases from 9 percent in 1992 to 3 percent in 2008. In models that do not control for sports participation (not shown here but available from the authors), the gender difference in attendance is about twice as large as in these results. This indicates that lower levels of sports capital account for around half of the gender difference in attendance. An interesting manifestation of this is found in Hofacre (1994), who attributes women's relatively high percentage attendance in the early years of indoor soccer to the fact that neither men nor women were familiar with this sport.

We now use these estimates to calculate to what extent sports participation has contributed to the overall decline in the gap in sports attendance between men and women. We saw in Table 1.3 that between 1992 and 2008 the gender gap in sports participation fell from 21 to 13 percent. A marginal effect of sports participation on attendance of 30 percent implies that 2.4 percent of the decline in the gender difference in attendance stems from the decline in the gender difference in sports participation. This accounts for over a third of the 7.1 percent decline in the difference between men's and women's attendance at sporting events. Further analysis of either the overall decline in sports participation or the convergence in men's and women's sports participation is beyond the scope of this chapter. However, one must at least acknowledge the potential role of Title IX. By providing young women with more opportunities to play sports at a young age, Title IX probably has contributed to the convergence in sports attendance.

Tables 1.7 and 1.8 give the marginal effects for probit estimates of equations (1.1a) and (1.2) using the SPPA matched samples. We estimate four models. Each model contains standard demographic measures as independent variables along with a measure of sports capital. This measure takes two forms. In columns 1 and 4, we use a general indicator of whether the individual participated in sports, as appears in equation (1.1a). In columns 2 and 3, we use the vector of dummy variables that appears in equation (1.2) and captures each of the household types of sports capital. The set of dummy variables includes indicators for single persons who participate in sports, couples in which both spouses participate, and couples

Table 1.7 Women 2002 matched sample (marginal effects from Probit model on attendance)

Variables	1	2	3	4
Age 18 to 24	0.189*** (0.04)	0.143*** (0.04)	0.120*** (0.041)	0.133*** (0.041)
Age 24 to 34	0.115*** (0.026)	0.0767*** (0.026)	0.0587** (0.027)	0.0680** (0.027)
Age 35 to 44	0.0887*** (0.025)	0.0607** (0.025)	0.029 (0.025)	0.0351 (0.025)
Age 45 to 54	0.0296 (0.025)	0.0156 (0.025)	0.013 (0.025)	0.0173 (0.026)
Age 55 to 64	-0.0213 (0.032)	-0.0255 (0.032)	-0.0219 (0.034)	-0.02 (0.034)
Urban	0.0387** (0.017)	0.0311* (0.017)	-0.00053 (0.018)	0.00316 (0.018)
Some College	0.107*** (0.019)	0.0952*** (0.019)	0.0837*** (0.02)	0.0853*** (0.02)
College	0.131*** (0.023)	0.113*** (0.023)	0.105*** (0.024)	0.110*** (0.024)
Graduate	0.0963*** (0.03)	0.0768*** (0.029)	0.0537* (0.03)	0.0591** (0.03)
Income 25 to 49	0.0986*** (0.024)	0.0902*** (0.024)	0.0695*** (0.024)	0.0754*** (0.024)
Income 50 to 74	0.199*** (0.028)	0.181*** (0.029)	0.122*** (0.029)	0.129*** (0.029)
Income 75 up	0.264*** (0.029)	0.233*** (0.03)	0.159*** (0.031)	0.165*** (0.031)
White	0.113*** (0.019)	0.109*** (0.019)	0.0841*** (0.02)	0.0875*** (0.019)
Married	-0.0631*** (0.023)	-0.108*** (0.028)	-0.290*** (0.031)	-0.312*** (0.027)
Both participate		0.406*** (0.024)	0.272*** (0.028)	
Male only		0.227*** (0.024)	0.0706*** (0.024)	
Female only		0.359*** (0.038)	0.369*** (0.041)	
Single participant		0.403*** (0.037)	0.412*** (0.038)	
Participate	0.320*** (0.018)			0.292*** (0.02)
Spouse attends			0.492*** (0.018)	0.501*** (0.017)
Observations	4,422	4,425	4,425	4,422

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 1.8 Men 2002 matched sample (marginal effects from Probit model on attendance)

Variables	1	2	3	4
Age 18 to 24	0.146*** (0.05)	0.227*** (0.048)	0.180*** (0.051)	0.117** (0.051)
Age 24 to 34	0.157*** (0.028)	0.211*** (0.027)	0.159*** (0.029)	0.116*** (0.03)
Age 35 to 44	0.139*** (0.026)	0.176*** (0.025)	0.137*** (0.027)	0.108*** (0.027)
Age 45 to 54	0.0781*** (0.026)	0.0964*** (0.026)	0.0641** (0.028)	0.0499* (0.028)
Age 55 to 64	0.0498 (0.032)	0.0364 (0.032)	0.0428 (0.035)	0.0526 (0.035)
Urban	0.0866*** (0.018)	0.0750*** (0.018)	0.0790*** (0.019)	0.0901*** (0.019)
Some College	0.0595*** (0.021)	0.0372* (0.021)	0.0341 (0.022)	0.0539** (0.022)
College	0.123*** (0.024)	0.105*** (0.024)	0.0748*** (0.025)	0.0952*** (0.026)
Graduate	0.0952*** (0.029)	0.0686** (0.029)	0.0693** (0.031)	0.0930*** (0.031)
Income 25 to 49	0.110*** (0.025)	0.0892*** (0.025)	0.0715*** (0.026)	0.0868*** (0.026)
Income 50 to 74	0.202*** (0.028)	0.186*** (0.028)	0.143*** (0.03)	0.155*** (0.03)
Income 75 up	0.233*** (0.029)	0.226*** (0.029)	0.146*** (0.031)	0.147*** (0.031)
White	0.120*** (0.024)	0.118*** (0.024)	0.0790*** (0.026)	0.0800*** (0.026)
Married	-0.0279 (0.024)	0.0524 (0.045)	-0.02 (0.047)	-0.197*** (0.025)
Both participate		0.363*** (0.022)	0.246*** (0.025)	
Male only		0.304*** (0.03)	0.260*** (0.033)	
Female only		0.110*** (0.0343)	-0.0034 (0.0358)	
Single participant		0.449*** (0.039)	0.463*** (0.037)	
Participate	0.350*** (0.016)			0.295*** (0.018)
Spouse attends			0.534*** (0.017)	0.518*** (0.017)
Observations	4,314	4,344	4,344	4,314

Note: Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

in which only the man or only the woman participate. Couples in which no one participates is the default for married couples, and single persons who do not participate is the default for singles.

Finally, we append to equation (1.2) a dummy variable that controls for whether one's spouse has attended one or more sporting events. The coefficient estimates provide a direct test of the battle of the sexes, as it shows whether one's spouse's behavior affects one's own behavior independent of sports capital. The results appear in columns 3 and 4.

In almost every case, either one's own participation or the participation of one's spouse increases sports attendance. The one exception is men without sports capital who are married to a woman with sports capital in the model that controls for spouse's attendance. Both one's own and one's spouse's sports capital are positively related to attendance. When both partners have sports capital, women are 40 percent more likely to attend than singles without sports capital, and men are 36 percent more likely to attend. When only one partner has sports capital, the effect is much smaller and depends on which partner has the capital. A woman (man) with sports capital who is married to a man (woman) without capital is more likely to attend than a woman (man) without sports capital married to a man (woman) with sports capital. The probability of attendance for couples with differing amounts of sports capital is lower than for singles with capital and higher than for single persons without capital. This suggests that some bargaining occurs over attendance choices for these couples that resembles what is predicted by the battle of the sexes. Unlike the traditional battle of the sexes story in which only men are interested in sports, this is true for both men and women with sports capital married to a partner without it.

The spousal attendance variable, which appears in columns 3 and 4 of Tables 1.7 and 1.8, has a large effect, increasing the probability of attending a sports event by about 50 percent. When this variable is included, the effects of sports capital remain large and significant except for the attendance of men when only their wife has sports capital. This suggests that the results for the battle of the sexes still hold when one accounts for the presence of sports capital.

Given the impact of one's spouse's capital on sports attendance, we wondered if assortative mating might be taking place. Individuals with sports capital might be inclined to marry other individuals with sports capital and likewise for those without it. The data suggest that a substantial amount of assortative mating occurs. Table 1.9 reports the distribution of couples by sports capital. In the 2002 SPPA, 76 percent of all couples were matched on sports capital. Neither spouse had sports capital in 60 percent of marriages, while both had it in 16 percent of marriages. Only 23 percent of the couples were mismatched. In 18 percent of marriages,

Table 1.9 Participation patterns of married couples (%)

Neither participates	60.2
Only male participates	18.4
Only female participates	5.0
Both participate	16.4
Participation rates for partners (%)	
	Participation rate of wife
Male participant	47.2
Male non-participant	7.7
	Participation rate of husband
Female participant	76.6
Female non-participant	23.4

only the husband had it, and in 5 percent of marriages only the wife had it. Thus, while the stereotypical battle of the sexes scenario, in which the husband has sports capital but the wife does not, is by no means common, it is about three times as likely to occur as the case in which the woman is the more active sports participant. Cutting the data another way, we see that 77 percent of the women who participated in sports were married to a man who also participated in sports, and 47 percent of the men who played sports had a wife who played sports. As Table 1.5 has shown, attendance mirrors these choices. When both partners have sports capital, 68 percent of husbands and 63 percent of wives attend sporting events. If neither spouse has sports capital, only 23 percent of men and 15 percent of women go to sports events.

The data reported here are consistent with the predictions of the battle of the sexes model and with the model of the transfer of sports capital combined with household maximizing decisions. Particularly striking is the convergence found in Table 1.5 when we compare singles with and without sports capital to those in a marriage to a partner with a different amount. We offer strong evidence for the general result of the battle of the sexes that couples attend events together. Our data also support the view that sports capital acquired from a spouse helps to determine an individual's attendance decisions.

1.6 CONCLUSIONS

We find that the stereotypical view of married couples – that women are art patrons while men watch sports – is inaccurate. When we look closely

at women's behavior, we see that they attend sporting events in great numbers and that the factors affecting their attendance are very similar to those influencing men. We find that younger individuals attend more sports events than older ones. Income and education both positively impact sports attendance for men and women. Active participation in sports has a large effect on the attendance of both women and men and on that of their spouse. The majority of women who play sports are married to men who also participate: these couples have higher rates of attendance than other married couples. The attendance patterns of married individuals who differ widely in sports capital are more alike than those of single individuals with different levels of sports capital. A spouse with sports capital is less likely to go, while his/her partner's probability of attending increases. Thus, marrying someone with a different level of sports capital moderates one's behavior.

Whether or not either spouse plays sports, individuals are much more likely to go to sports if married to someone who attends. This result is consistent with the standard result of the game-theoretic battle of the sexes. While married individuals' attendance at sporting events draws closer to that of their spouse, women still attend fewer sporting events than men. Moreover, this gap cannot be explained by differences in the demographic variables we include in this model. We find that the male–female differences are related to the lower levels of women's active participation in sports and that these differences have diminished over time.

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