Non-Cognitive Skills, Social Success, and Labor Market Outcomes*

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Abstract

This paper models the acquisition of non-cognitive, social skills that are valued in the labor market. Individuals choose whether to participate in costly "social" activities for which the immediate purpose is *not* the acquisition of marketable skills. Participation, however, generates valuable skills as a by-product. *Success* at social activities generates additional benefits, depends on non-market abilities, and is limited. We consider two definitions of social success. First, the number of successful participants is fixed. Alternatively, success is relative. Using either definition, the magnitude of labor market inequality that is a consequence of participation in the social activity does *not* depend on the magnitude of the non-market ability differences. If, however, success is relative, there may exist multiple equilibria with very different welfare consequences. The model also implies that social activities that draw on abilities that are commonly held will induce wider participation and generate higher average wages.

1. Introduction

While popular writers have long focused on non-cognitive or social skills as important determinants of professional success,[1] economists have only recently begun studying the influence of individual characteristics like persistence, leadership, and sociability on market outcomes. The economics literature, like the popular one, identifies non-cognitive skills with productive factors not captured by standardized tests or observable measures of human capital (Heckman, 2000).[2] These are the skills valued by employers or clients that do not involve technical or professional knowledge.

A number of studies, both in the field and in the lab, indicate that these non-cognitive skills are associated with considerable economic advantages including wage premia (Heckman and Rubinstein, 2001; Mobius and Rosenblat, 2005), employment and occupation status (Borghans et al., 2006, Waddell, 2006) and bargaining power (Glaeser, et al., 2000). Importantly, and again consistent with the popular literature, there is evidence that such non-cognitive skills are only partly innate or the products of family inputs. Like cognitive skills, there is evidence that non-cognitive skills may be acquired either through deliberate learning or through practice and experience (Persico, et al. 2004, Kuhn and Weinberger, 2005, Stevenson, 2005, Postlewaite and Silverman, 2005).

To date, the economics literature on non-cognitive skills has been almost exclusively empirical. The aim of this paper is to model the acquisition of non-cognitive, social skills that are valued in the labor market and thus to explore the interactions between non-market abilities, social institutions and labor market success. While differences in social adaptability and motivation may have an exogenous basis, we assume that some of the differences among individuals arise from choices they make. In particular, we assume individuals make choices about whether to engage in activities that are primarily social or non-cognitive, that is, activities for which the immediate purpose is *not* the acquisition of marketable skills. Participants will, however, accumulate non-cognitive skills that are valued in the labor market

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[1] A vast number of self-help books and how-to books for business are centered around this idea. Perhaps the most famous example is Dale Carnegie's 1936 *How to Win Friends and Influence People*, which has sold more than 15 million copies and remains in print. In it Carnegie famously contends that financial success is due 15 percent to technical knowledge and 85 percent to "the ability to express ideas, to assume leadership, and to arouse enthusiasm among people," (p. xiv).

[2] While the economic literature describes these skills as non-cognitive, the use of such skills would often seem to involve cognition, i.e., the exercise of perception, thought and reason.

as a by-product of participation in these activities. Importantly, *success* at these activities may depend on abilities that have no direct value in the labor market and success is limited. We will call the attributes upon which social success depends "non-market abilities." We think of athletic programs for adolescents as a typical example of a social activity from which productive skills may be acquired. For the overwhelming majority of participants in little-league baseball or youth soccer leagues, the athletic abilities they either have or acquire generate absolutely no market value. Yet it is widely believed that participants nevertheless benefit in important ways; among other things they are thought to learn perseverance, the importance of hard work, and interpersonal skills.

Athletic programs are not unique among activities that are commonly thought to generate substantial benefits for participants. Consistent with this idea, the admission committees of many universities put substantial weight on participation in drama clubs, school newspapers and yearbooks, and student government (among many such activities). For our purposes, there are four salient facts about such activities: (1) there is substantial variation in the degree to which young people participate in them, (2) there are often substantial wage premia associated with participation,[3] (3) success at these activities is limited, and (4) the definition of success depends on the activity. If participation and success in these social activities generate non-cognitive skills valued in the market place, unequal participation in, and the institutional structures defining success at, these activities will affect market inequality.

This paper considers the determinants of non-cognitive skills acquisition from social activities, and the labor market consequences of different definitions of social success. For some activities, such as athletics or drama clubs, there is plausibly exogenous heterogeneity in ability. We assume that participation is, on net, costly, and as a consequence less able individuals may forgo participation even taking into account the valuable non-cognitive skills acquired through participation. We assume that social success generates additional market benefits, but there remains a question of what constitutes social success. There are two leading candidates; first, the number of successful participants is fixed, independent of the total number of participants. If success in baseball consists of being on the first string team, nine individuals will be "successful," regardless of the total number of participants. There is similarly a fixed number of successful participants for

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[3]For example, in the U.S., 52% of white males participate in high school athletics, and conditional on family background and demographic variables, there is a 12% adult wage premium associated with participation (Persico, et al. (2004)).

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other activities, if success is defined as being the editor of the student newspaper or having the lead role in the school play. Alternatively, success can be defined as performance relative to other participants. Being the second best catcher on a little league team of thirty may be more rewarding than the best catcher on a team of eleven or twelve. Similarly, having more articles published in the student newspaper than 90% of all writers may be counted as successful.

Whether the number of successful participants is fixed or relative to the number of participants, it is hardly surprising that there is a link between the social activity and later labor market outcomes: unequal non-market abilities lead to differential participation in an activity that generates valuable non-cognitive skills (albeit indirectly), which in turn leads to inequality in the market place. What is less obvious is that if the relevant social institution keeps the number of successful participants fixed, the magnitude of labor market inequality that is a consequence of participation in the social activity generally does *not* depend on the magnitude of the non-market ability differences. Indeed, the difference in market wages that is a consequence of uneven participation remains the same even if all young people have the same non-market ability. In equilibrium, there will always be two individuals who are nearly identical in non-market ability, one will participate and the other will not. The discontinuity (with respect to non-market ability) in the decision to participate leads to a discontinuity in adult wages.

If the relevant social institution defines success as relative to the number participants, there will also be a discontinuity in adult wages that results from participation decisions. However, in this case, there may also be an interesting multiplicity of equilibria with different participation rates. There may be a low participation equilibrium with a small number of very high ability individuals participating; lower ability individuals optimally choose not to join in, since success among this very high ability group is unlikely. Alternatively, there can be a high participation equilibrium, in which it pays lower ability individuals to participate, since the average ability of the pool of participants with whom they are "competing" is lower.

Our analysis reveals the potential for substantial interactions between non-market abilities, social institutions, and the acquisition of non-cognitive skills valued in the market. While, by one metric, the magnitude of labor market inequality due to participation in social activities does not depend the distribution of non-market abilities, the size of the population that gains non-cognitive skills, and thus higher wages, from participation does. When the number of successful participants is fixed, a steeper distribution of non-market abilities will result in

a lower rate of participation than that associated with a flatter distribution of abilities. Consequently, if there is a choice among various social activities, those for which ability is more homogeneous will lead to higher participation levels which, in turn, lead to higher average adult income. Alternatively, for a given activity, administrators could segregate populations by a (imperfect) measure of ability and thus homogenize the relevant competition. For example, if there can only be m successful members a high-school team or club, then having boys and girls teams and having separate teams for upper and underclassmen might generate more participation in this activity, and higher average productivity in the labor market. Of course, this value of segregation by ability and the possibility of many winners applies more generally. If important non-cognitive skills may be obtained through participation and success in social activities, then important gains in productivity may be obtained through the proliferation of social activities that pre-sort on non-market ability.

We introduce the model and present our analysis in the next section. Section 3 concludes with a discussion of extensions and the related theoretical literature.

2. Model

There is a continuum of individuals, indexed by $i \in [0, 1]$, who live for two periods. The individuals do not discount. When they are young (that is, in the first period) they can participate in a social activity, and when they are adults (the second period) they enter the labor market. Participation in the activity produces skills or attributes that will be valued in the adult labor market. We describe the activity as *social* to emphasize that the activity itself does not generate technical or professional knowledge as, for example, attending school would. As discussed in the introduction, *participation* itself generates productive, non-cognitive skills, and we assume that a young person's participation in an activity thus affects their adult wage.

Formally, we assume that an individual's wage in the second period is increased by $r > 0$ if he or she has participated in the activity. There are two points that should be noted about this formulation. First, the formulation assumes that the value of the non-cognitive skills that are acquired through participation is independent of an individual's other attributes and that the skills are "all purpose" in the sense that they generate the same return regardless of the occupation choice. If the value of participation depended on other skills or on occupation choice, the value to someone who ultimately worked as a salesman might well differ from the

value to someone who worked as a bricklayer. One could extend our model to incorporate a variety of skills that participation generates, and allow the value of those skills to vary with adult occupation without altering our main message. We consider this extension further in the discussion section.

The second point is that r is the benefit to participation, independent of success at the activity. While the activity may generate interpersonal skills and increased discipline in all participants, it may be that the more successful participants have a greater gain in confidence or self esteem. To capture this latter component, we assume that the more successful participants gain more in terms of non-cognitive skills that are valued in the labor market than do less successful participants. Specifically, we assume that the most successful participants receive an adult wage increment of $k > 0$ (in addition to the guaranteed wage increment of r for simply participating).

We discussed in the introduction two different notions of success, one in which the number of successful participants is independent of the size of the participant pool and the second in which the number of successful participants is relative to the number of participants. We deal next with the first notion of success.

2.1. Fixed Number of Successful Participants

We assume that the premium k accrues to a proportion of the total population $m \in (0,1)$. We denote by S the (measurable) set of individuals who choose to participate and by $\mu(S)$ the measure of this set. If $\mu(S) \leq m$, all participants will be successful, but if $\mu(S) > m$ the proportion of the individuals that participate who are successful is $m/\mu(S) < 1$.

We assume that participation is costly, where the costs can be time or effort costs, and that all individuals face the same cost of participating, $c > 0$.[4] Individuals may differ in ability at the social activity; these non-market abilities are described by the function $a : [0,1] \rightarrow R^+$ that assigns to each individual a positive number that is his ability. We denote by a_i individual i's ability. Without loss of generality, we can assume that the individuals are arranged so that the function $a(\cdot)$ is decreasing, and that $a_0 = 1$. We assume that $a(i) > 0$ and that a is differentiable, (hence, $a' < 0$).

When the proportion of individuals that participates is greater than the proportion that can be successful, more able individuals are more likely to be suc-

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[4]One could alter the model to allow for differential costs of participation without qualitatively altering our main results.

cessful than less able. The tradeoff each individual faces when considering participation is the cost c and the benefits r plus the probability of success times k. Since the probability of success is greater for a higher ability individual than a lower ability individual, if individual j finds it optimal to participate, all higher ability individuals will also find it optimal. Consequently, the set of individuals who optimally choose to participate will be an interval $[0, j]$.

We will assume a specific form that relates each individual's ability to his probability of success given the set of participants. Suppose the set of participants is an interval $[0, j]$, where j is the marginal person. If j is less than m, everyone's probability of being successful is 1. Suppose that $j > m$, and consider the expression

$$\int_0^j a(i)^\gamma di - m.$$

Since the function a is less than or equal to 1, this expression must be greater than 0 for γ close to 0, since for each i $a(i)^\gamma$ gets close to 1 for sufficiently small γ. As γ gets large, $a(i)^\gamma$ goes to 0 for $i > 0$, hence for sufficiently large γ this expression is less than 0. For fixed j the expression is monotonically decreasing in γ, and thus there is a unique value of γ for which the expression is equal to 0. We denote this value $\gamma(j)$, and specify the probability that $i \in [0, j]$ is successful to be $a(i)^{\gamma(j)}$. It is clear that by construction of the probabilities the number of successful individuals will be equal to m.

A *fixed success participation problem* is a quintuple $\{a, c, r, k, m\}$ where the variables respectively denote the ability function, the (common) cost of participating, the guaranteed wage increment for participating, the wage increment for successful participants, and the proportion of the population that can be successful. If $r > c$, all individuals will choose to participate, and if $r + k < c$, none will participate. From now on, unless otherwise noted we restrict attention to nontrivial participation problems, that is, when $r < c < r + k$.

Equilibrium. Whether or not it is optimal for an individual to participate depends on which of the other individuals participate. We assumed that $k + r > c$, that is, the sure return from participating plus the value of being successful is greater than the cost of participating. If no other individuals participate, any individual i will be assured of being successful if he or she participates, hence it will be optimal to do so in these circumstances. The same argument essentially guarantees that it is optimal for any individual to participate if the proportion of other individuals participating, $\mu(S)$, is no greater than m. On the other hand, if all

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other individuals are participating, some of the participating individuals will not be successful, and hence, ex post will be worse off for having participated. Our notion of equilibrium is a Nash equilibrium of the game in which all individuals simultaneously choose whether or not to participate. As pointed out above, the set of agents who optimally choose to participate must be an interval $[0, j]$. We next define formally our equilibrium concept.

Definition: A *participation equilibrium* consists of a set of individuals $[0, j]$ such that:

    i. For all $i \in S$, $r + a(i)^{\gamma(j)}k \geq c$

    ii. For all $i \notin S$, $r + a(i)^{\gamma(j)}k < c$.

A participation equilibrium consists of a set of individuals $[0, j]$, each of whose expected utility from participating when exactly the set $[0, j]$ participates is greater than or equal to the cost, and any individual not in $[0, j]$ would have expected utility from participating strictly less than the cost of participating.

This definition implicitly assumes that $j > m$. This is without loss of generality; there cannot be a Nash equilibrium in this game where the proportion of individuals who choose to participate is not greater than m, since it would always pay some non-participating individuals to participate.

Consider now $j, j' \in (0, 1)$ with $j < j'$. $\int_0^{j'} a(i)^{\gamma(j)}di > \int_0^{j} a(i)^{\gamma(j)}di = m$, and hence, $\gamma(j')$ must be greater than $\gamma(j)$. Since $a(j) > a(j')$, we thus have $a(j)^{\gamma(j)} > a(j')^{\gamma(j')}$. In other words, as the set of participants gets larger, the probability that the marginal participant is successful is strictly decreasing. For an equilibrium with a strict subset of the population $[0, j]$ participating, it must be that

$$a(j)^{\gamma(j)}k + r = c.$$

Summarizing, we have the following proposition:

Proposition: For a fixed success participation problem $\{a, c, r, k, m\}$, there is a unique participation equilibrium when there is a fixed number of successful participants.

    i. If $r + k \cdot a(1)^{\gamma(1)} > c$ the set of participating individuals is $[0, 1]$

    ii. If $r + k \cdot a(1)^{\gamma(1)} < c$ the set of participating individuals is $[0, j]$ where j is the solution to $r + k \cdot a(j)^{\gamma(j)} = c$.

Inequality. A focus of this paper is the inequality of labor market outcomes that derives from unequal acquisition non-cognitive skills. There are two points in

time that we can investigate inequality: at the time of birth and at the time people come into the economist's scope. In either case, some inequality may not be surprising since we allowed for exogenous heterogeneity in ability. We should stress that this heterogeneity among individuals was *not* ability that was valued in the labor force, but rather, the ability was only useful in the social activity. Nevertheless, even though the ability heterogeneity only mattered for the social activity, participation in the social activity lead to skills that were valued in the adult labor market. First, all individuals who participated in the activity directly acquired a skill that was valued at r. Differential individual abilities will not lead to inequality in market outcomes through this channel though, since all participating individuals receive the benefit r regardless of ability (but not those individuals who don't participate).

More able individuals will, however, fare better with respect to the prize k that is associated with being successful in the activity when more able individuals have a strictly higher probability of being successful than less able individuals who participate. Inequality among individuals at the ex ante stage – prior to choosing whether or not to participate – is bounded by the magnitude of the heterogeneity in non-market ability. In any participation equilibrium the least able individual who participates will be indifferent between participating and not participating. Hence, all individuals who don't participate have the same ex ante expected utility as the marginal participating individual. But the highest ability individual, i_0, (who has the highest ex ante expected utility) will have ex ante expected utility only slightly greater than that of the marginal individual if his ability is only slightly higher than that of the marginal individual.[5]

Ex post, however, (that is, after the individuals have made their participation choices and the successful participants have been determined) things are quite different. We assumed that the differences in non-market ability matter only for the social activity and have no value in the labor market. Thus, the only differences among the individuals ex post stem from whether they participated in the activity or not, and if they did whether they were successful. In the second period, there are three classes of individuals, each with a different utility. At the bottom are

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[5]Consider the extreme case in which all agents have identical ability. There, will still be a unique measure of agents who participate, but since there is not a unique ordering of the agents by ability, any set of agents with this measure will constitute a participation equilibrium. All agents in a participation equilibrium will have the same ex ante expected utility whether they participate in the activity or not. However, those who participate will have higher wages in the future, offsetting the participation cost they incur prior to entering the labor force.

those individuals who chose not to participate and acquired no marketable skills through the social activity. Next is the set of unsuccessful participants. They acquired the skills associated with participation, and hence gained the adult wage increment r, but not the additional wage increment the successful participants receive. Had they foreseen the outcome, they would have chosen not to participate, but having incurred the first period cost c, find themselves with higher utility than those individuals who (rationally) chose not to participate. At the top are those individuals who participated and won, and now have skills valued at $r + k$ in the second period.

There is an important difference between the ex ante evaluations of inequality and the ex post evaluations. As pointed out, ex ante expected utility is continuous in individuals' indices, and there is very little ex ante inequality when ability differences are small. Ex post, there are sharp differences in utility – $0, r$ and $r + k$ – and the magnitude of the differences is independent of the ability differences (as long as not all individuals participate). Changes in the distribution of ability will affect the size of the bottom two groups, but not the utilities associated with them.

2.1.1. The Value of Social Segregation by Non-market Ability

Steeper distributions of non-market abilities will, in general, result in lower participation in the social activity than will flatter distributions. Consider a non-market ability distribution that is relatively flat. In this case, the ability of the marginal participant will be close to the average ability of the pool of participants. If the ability distribution is made steeper, the ratio of this marginal individual's ability to the average ability of those with higher ability decreases, and the marginal individual will no longer be willing to participate. Consequently, activities for which innate ability is more homogeneous will lead to higher participation levels which, in turn, lead to higher average adult income.

The relationship between the steepness of the non-market ability distribution and the rate of social participation suggests that if a community seeks greater labor market productivity through the acquisition of social skills, it should promote social activities for which ability is relatively homogenous. In doing so, it would promote higher rates of participation and higher rates of non-cognitive skill accumulation. To be clear, this increase in labor market productivity from a higher rate of participation is not welfare improving. Rather, the additional individuals who participate when the ability distribution is flattened are paying a net cost

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and, to the extent that they are successful, the benefit is a pure transfer from higher ability individuals to them.

An alternative scheme for increasing participation with the potential to increase welfare involves social segregation by non-market ability. Suppose, for a given activity, organizers could segregate populations by a (imperfect) measure of ability and thus homogenize the relevant competition at relatively low cost. This would, in effect, increase the number of social activities and both decrease the number of potential participants and homogenize the non-market ability in each activity. For example, if there can only be m successful members a high-school soccer team, then having boys and girls teams and having separate teams for upper and underclassmen would generate more participation in this activity, and higher average productivity in the labor market. In this way, social segregation by non-market ability could have positive effects on labor market outcomes. Importantly, the welfare effects of social segregation may be qualitatively different from the effects of flattening the non-market ability distribution for a single activity. With social segregation there is the potential for welfare gains because segregation generates both more participation *and* more success.

2.2. Relative Success

We turn next to the second definition of success, in which the number of successful participants in the social activity is a given proportion of the number of participants, rather than a proportion of the total population. If S is the set of participants, there will be $p \cdot \mu(S)$ ($\mu(S)$ is the Lebesgue measure of S) successful participants, where $p \in (0, 1)$. A *relative success participation problem* is a quintuple $\{a, c, r, k, p\}$ where the variables respectively denote the ability function, the (common) cost of participating, the guaranteed wage increment for participating, the wage increment for successful participants, and the proportion of those participating who can be successful.

As with the fixed number of successful participants case above, more able individuals will have a higher probability of success. Consequently, as in that case, if an individual finds it optimal to participate, all individuals with higher ability will also find it optimal to participate. We can thus limit our attention to the case in which the set of participants is an interval $[0, j]$ as we did before.

We specify the probability of success analogously to the fixed success problem. Let $\gamma(j)$ be such that $\int_0^j a(i)^{\gamma(j)} di - pj = 0$. As in the fixed success problem, $\gamma(j)$ is uniquely defined in this way. We assume that the probability that participating

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individual i is successful is $a(i)^{\gamma(j)}$ when the set of participants is $[0, j]$. The main difference between fixed success participation problems and relative success participation problems is the possible existence of multiple equilibria with different participation rates in the latter. We state this in the following proposition.

Proposition: Multiple equilibria with different participation rates are possible for relative success participation problems.

We prove the proposition by providing an example of such multiple equilibria.

Example: Consider the following relative success participation problem. There are two ability levels, high and low, denoted respectively by $a_h = 1$ and $a_l \in (0, 1)$.[6] Individuals in $[0, H]$ have ability H, and individuals in $(H, 1]$ have ability a_l. Let $p \cdot k + r > c > r$.

Suppose the set of participating individuals consists of only the high ability individuals $[0, H]$. Then each individual has the same probability of being successful, p. Each individual's expected wage increment from participating is $p \cdot k + r$, and consequently strictly prefers participation to not participating. If an individual i not in $[0, H]$ were to choose to participate, his chances of being successful would then be $a_l \cdot p$, and would choose to participate if

$$a_l \cdot p \cdot k + r > c.$$

But for sufficiently low a_l, the left hand side is close to r, and since we assumed $r < c$, low ability individuals will choose not to participate. Thus, only the high ability individuals participating is an equilibrium.

We will next argue that when the proportion of high ability individuals, H, is sufficiently low, there will be a second equilibrium with "universal" participation, that is with $S = [0, 1]$. If $S = [0, 1]$, $a(1)^{\gamma(1)}$ will be close to p when H is close to 0.[7] Since $p \cdot k + r > c$, low ability individuals will strictly prefer participation to nonparticipation when all others are participating. The expected gain to participating for high ability individuals is even greater, so they will participate as well.

In summary, if the proportion of high ability individuals and the ability of low individuals are both sufficiently small, both the "exclusive" participation equilibrium in which only the high ability participate and the universal participation

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[6] Note that this ability function is neither continuous nor strictly decreasing, hence violates our assumption that the ability function is differentiable. We return to this below.

[7] This can be seen by observing that when $H = 0$, $a(1)^{\gamma(1)} = p$, and that $\gamma(1)$ varies continuously in H.

equilibrium exist. For expositional ease, we assumed that there were just two ability levels. It is clear that one can approximate the step function defining abilities by a smooth function and maintain the two qualitatively different equilibria.

There are important differences between the two equilibria described in the example. There is no conflict between the high and the low ability individuals as to which equilibrium is preferred. Clearly the low ability agents prefer the universal participation equilibrium, but it is also straightforward to see that the high ability agents prefer it as well. The probability that high ability agents are successful is higher in the universal participation equilibrium than in the limited participation equilibrium as a result of the increase in the size of the participant population. That the universal equilibrium is preferred by both abilities is made possible by the fact that unlike in a fixed success participation problem, the number of "prizes" goes up with participation here.

3. Discussion

3.1. Elaborations and Extensions of the Model

The social activity. Our interest is in the labor market consequences of acquiring non-cognitive skills through participation and success in social activities. In this way, we are concerned with the interaction between non-market abilities, social institutions and labor markets. Our leading examples of social activities are specific, organized activities available to adolescents, but we think of these as metaphors for integration and participation in society in general.[8] Although they may not make a formal, or even conscious decision, people often choose either to interact or to withdraw from the social activities of their community. Some are well integrated into social institutions and while others choose relative isolation. If participation and success in even informal social institutions create productive skills, then social isolation and definitions of social success may have quite broad economic consequences.

Multiple activities. For simplicity we assumed a single activity and a single skill associated with participation in that activity that affected adult wages. As mentioned in our discussion of some of the motivating examples of activities, there

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[8]See, e.g., Loury (2000) for a good discussion of the potential role of forced social exclusion in economics. Social isolation, which Barry (1998) defines as non-participation in a society's institutions, is closer to the phenomenon we study.

may be different skills that accrue to participation, such as interpersonal skills, discipline and confidence. One could extend our model to include a variety of market-valued skills that are generated by participation, along with a "technology" that associates the degree to which those skills accrue to different activities. A more detailed model of this sort would be useful for an empirical investigation into the relative importance of different activities in explaining labor market outcomes.

Determination of social activities. Our interest in this paper is focused on *social* activities, by which we mean activities whose aim is not to generate market benefits, but for which participation generates valuable non-cognitive skills as a by-product. Throughout the paper we mentioned a number of examples of such activities – drama clubs, orchestra, student government and athletics. We took as given the activity for which participation was valuable, but one should expect that different communities emphasize different activities. Since individuals will have different relative abilities across potential activities, which activity emerges in a particular community will have distributional effects. Which activity (or activities) emerge and how they are determined is an interesting question for future research. Our analysis also indicates, however, that taking the activities as given, those social activities for which ability is more homogeneous will lead to higher participation levels which, in turn, lead to higher average adult income. It follows that, again taking the social activity as given, communities seeking higher productivity in the labor market may promote such homogenization by segregating social competitions by non-market ability. Such segregation would permit the possibility of many winners and therefore generate higher levels of social participation, higher average wages, and potentially higher social welfare.

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