

# Self-Determination-Across Living and Working Environments: A Matched Samples Study of Adults With Mental Retardation

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**Abstract:** The environments in which people live, learn, work, and play influence many aspects of their lives, including their self-determination. These environments differ in the degree to which they enable people to receive personally designed and individualized supports. In the present study self-determination, autonomy, life choices, and lifestyle satisfaction for adults with mental retardation matched by level of intelligence, age, and gender but differing in type of residence or working environment were examined. Analyses indicated that respondent self-determination, autonomy, and satisfaction as well as opportunities for choice-making differed according to settings.

The environments in which people live, learn, work, and play influence many aspects of their lives. For much of the past century, the most salient features about the environments in which many people with mental retardation lived, and in, the last half of the century in which they learned and worked, were their relative isolation and congregate nature. As Braddock (1998) noted:

People with mental retardation are emerging from a dark and neglected past in our society and becoming more accepted and valued members of the community. Today, a dominant trend has clearly been established in the United States and internationally toward family support and community living, and away from the institutional model of the 19th Century. (p. 16)

With the increased acceptance of supported employment, the same trend is evident with regard to where people with mental retardation work (Wehman & Kregal, 1998). This trend was central to the 1992 definition of *mental retardation* (Luckasson et al., 1992). Luckasson and Spitalnik (1994) discussed the importance of the assumption in the 1992 definition that adaptive behavior occurs within the context of community environments typical of the individual's age

peers, suggesting that this assumption

establishes the goal of full adult status, for individuals with mental retardation and full inclusion and participation in community life ... and the focus on community environments and the individual's functioning within a social context moves much closer to the notion of supports than to the notion of services. (p. 88)

The movement from a "service delivery or program model perspective to individual planning and functional supports" (Luckasson & Spitalnik, 1994, p. 88) is central to achieving community inclusion. These authors defined supports as:

an array, not a continuum, of services, individuals, and settings that match the person's needs. Supports are resources and strategies that promote the interests and causes of individuals with or without disabilities that enable them to secure access to resources, information, and relationships as a part of inclusive work and living environments and that result in enhanced interdependence, productivity, community inclusion, and satisfaction. Support resources are individual resources, skills and competencies and the ability and opportunity to make choices, manage money, manage information, and the like. These resources are also other people, whether

family, friends, coworkers, people one lives with, mentors, or neighbors. Technology might also be a form of support. Another support resource encompasses habilitation services that may be needed. If the other naturally occurring resources are either not available or not sufficient to assist the person in a desired living, working, or school environment. (pp. 88-89)

With the dual emphasis on community living and personal supports in the field, there has been increased focus on the importance of self-determination for achieving community inclusion for people with disabilities (Abery, 1993; Nerney & Shumway, 1996; O'Brien, 1997; Powers et al., 1996; Sands & Wehmeyer, 1996; Wehmeyer & Metzler, 1995). It is evident that the basis for providing high quality supports is the identification of personal preferences, individual wants, and unique abilities—in short, supporting self-determination. *Self-determination* is defined in the American Heritage Dictionary of the English Language (1992) as:

1. Determination of one's own fate or course of action without compulsion. 2. Freedom of the people of a given area to determine their own political status; independence.

The first meaning refers to a personal self-determination—controlling one's life and one's fate. The second meaning refers to a national, political, or collective self-determination, the right of a nation or a group of people to self-governance. There are currently efforts underway nationally and internationally to enhance both the personal and collective self-determination of individuals with mental retardation.

Research at The Arc has been focused on conceptualizing self-determination as a personal construct, identifying factors contributing to the development and acquisition of self-determination, and examining its importance to the lives of people with mental retardation (Wehmeyer, 1996, 1998; Wehmeyer, Agran, & Hughes, 1998; Wehmeyer & Metzler, 1995; Wehmeyer & Schwartz, 1997). *Self-determination* was defined by Wehmeyer (1996) as "acting as the primary causal agent in one's life and making choices and decisions regarding one's quality of life free from undue external influence or interference" (p. 24). This type of behavior refers to actions that are identified by four essential characteristics based on the function (purpose) of the behavior: (a) the person acted autonomously, (b) the behavior(s) are self-regulated, (c) the person initiated and responded to event(s) in a psychologically empowered manner, and (d) the

person acted in a self-realizing manner (Wehmeyer, Kelchner, & Richards, 1996). People are self-determined based not on what they do (e.g., get married, stay single) but based on the purpose or function of their action (e.g., take control over their lives, live the way they want). Using this framework, Wehmeyer and colleagues have described the development of component elements of self-determined behavior in order to design instructional activities for students across their school career (Wehmeyer, 1997; Wehmeyer, Sands, Doll, & Palmer, 1997). Further, a model (depicted in Figure 1) in which three primary factors impact the emergence of self-determination have been suggested: (a) Individual Capacity, as influenced by learning and development; (b) Opportunity, as influenced by environments and experiences, and (c) Supports and Accommodations (Wehmeyer, 1999).

Napoleon Bonapart is reported to have said that ability is of little account without opportunity, and although much of our work has focused on enhancing the capacity of individuals with disabilities, we recognize the important role of opportunity in this process. The environments in which people live and work influence the way supports are provided and have an impact on the opportunities that many people with mental retardation have to experience and enhance their self-determination and improve their quality of life as well as prescribe, to a certain extent, the degree to which personalized, independent supports can be provided. The authors of the 1992 manual on the definition of *mental retardation* (Luckasson et al., 1992) similarly recognized the importance of environments in the lives of people with mental retardation. This manual, drawing from the work of O'Brien (1987) and O'Brien and Lyle (1987), identified five characteristics of optimum environments. Environments that increase the individual's independence, productive community integration, and satisfaction are, according to Luckasson et al., those that include a community presence, enhance choice-making opportunities, promote individual competence, enhance respect, and ensure community participation.

One might also suggest that optimum environments are those in which individuals have the opportunity to express and further develop or acquire self-determination. The impact of "environment" on self-determination has received limited attention. Wehmeyer, Kelchner, and Richards (1995) examined the relative self-determination of 408 adults with

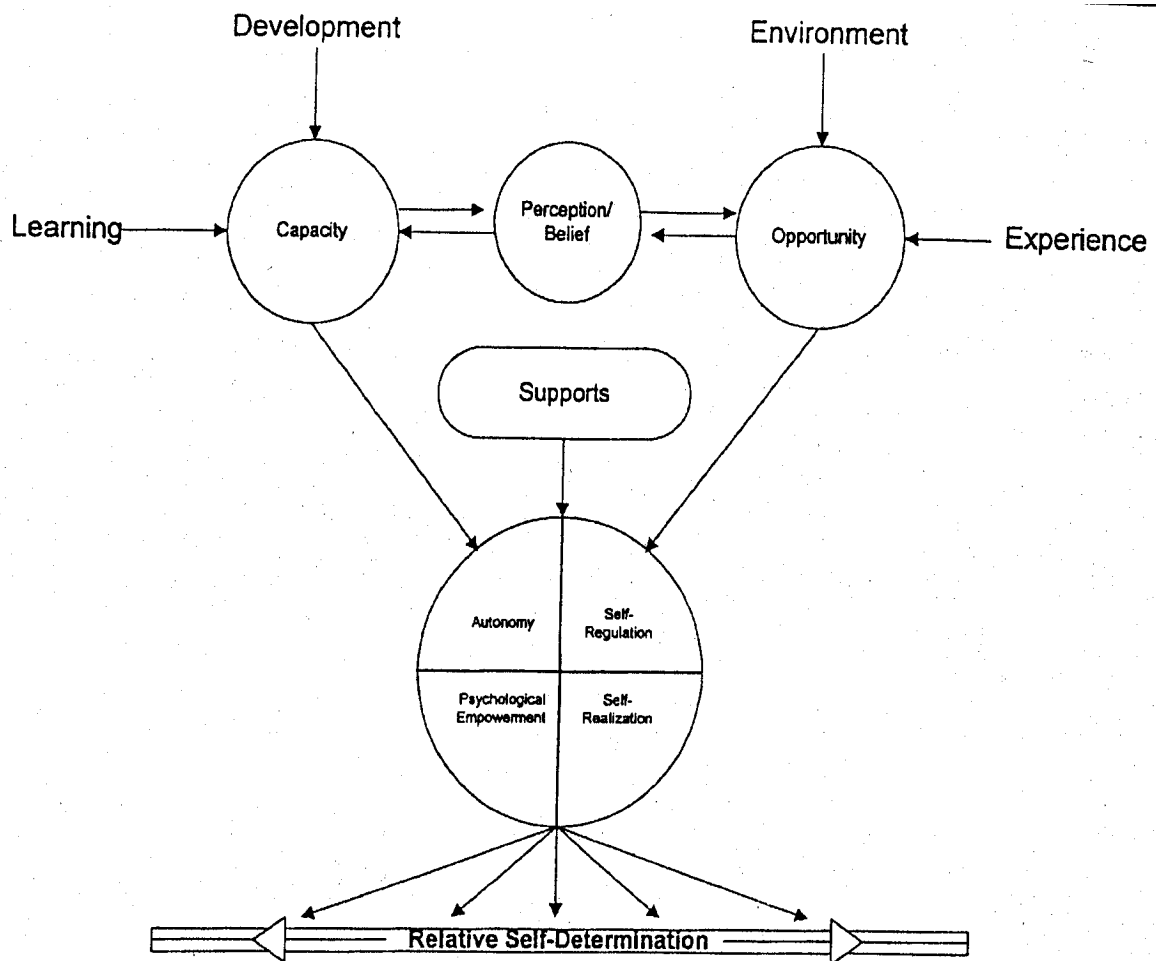


Figure 1. Model of the emergence of self-determination.

mental retardation as a function of their living environment. Self-determination was measured using a behavioral checklist on which participants responded to a series of questions about the degree to which they had control over and choice in major domains in their lives (e.g., home/family living, employment and leisure, money management). Respondents who lived independently (alone with or without support, with spouse and or children, or with friends) or with family members were more self-determined than were respondents who lived in group homes with 9 or fewer other people or in a congregate setting with 10 or more other people. Respondents who lived in the largest congregate settings were the least self-determined. Because, however, it is often the case that people with the most significant disabilities live in more restrictive settings, the impact of environment on self-determination in our study was confounded the level of disability. In addition, the dependent measure was

not a measure of self-determination, per se, but, instead, a checklist of behaviors that reflected self-determination.

Tossebro (1995) studied the relationship between self-determination and environment for 591 people with mental retardation. Tossebro measured self-determination by asking staff members to rate, on a scale of 1 to 5, the degree of freedom the person had to make decisions and to influence day-to-day activities - in his or her life and then correlating these ratings with living unit size. Self-determination was significantly, positively related to unit size for residences with 1 to 5 residents,  $p = .48$ , and was negatively related to unit size for residences with 6 to 16 residents,  $p = -.05$ . Thus, as in Wehmeyer et al. (1995), self-determination was fostered by smaller, more home-like residences.

Although these studies provide some evidence of the impact of environment on self-determination,

they have several limitations. The primary one is that the putative impact of the environment has been confounded with level of disability. That is, generally speaking, people with the most significant disabilities are more likely to live or work in segregated, congregate settings than are peers with less significant disabilities. Second, investigators have either measured only component elements of self-determination, particularly choice-availability (Kishi, Teelucksingh, Zollers, Park-Lee, & Meyer, 1988; Stancliffe, 1997; Stancliffe & Abery, 1997; Stancliffe & Wehmeyer, 1995) or have used insufficient indicators of self-determination as the dependent measure (Tossebro, 1995). In the present article we report findings from a study designed to examine self-determination status of people living or working in environments that varied according to the degree to which they met the standard of "optimum" environments discussed earlier.

## Method

### *Research Design*

We conducted a matched-samples design study in which people with mental retardation who lived or worked either in the community (supported or independent living, supported or competitive employment), in a community-based but congregate setting (group home, sheltered workshop), or noncommunity-based congregate setting (institution or nursing home, day program). Theoretically, in community-based environments, individuals with mental retardation are most likely to experience the characteristics of the optimum environment, whereas in community-based segregated settings they will experience partial opportunities for community integration, independence, and productivity. The final setting, noncommunity-based congregate settings, likely provide the fewest opportunities for community inclusion, productivity, and so forth. Research participants were grouped into sets of three individuals, one person per setting, each matched according to IQ (within 5 points), and, when possible, by age (within 8 years) and gender. They were recruited and assigned to groups based on the following definitions:

*Community-based group:* The person worked in a competitive job in the community (including supported employment) for minimum wage or better for at least 20 hours per week, with or without supports such as job coach; or the person lived in his or her own or shared apartment/house/dwelling (including supported living) with or without supports. We chose to, as a general rule,

exclude persons living with their parents from this or any group unless there was clear indication from the person that the family home was one option of several for the person and was the preferred option.

*Community-based, congregate:* The person worked in a sheltered employment setting involving piecework at piece rates, including working at segregated workshop or in an enclave setting; person lived in a group home located in the community generally with 4 to 6 individuals.

*Noncommunity-based, congregate:* The person was served in a congregate day-program operated in a disability-service-providing agency or had no previous history of employment and participated in a segregated vocational preparation program (daily living skills training, prevocational skills training) while waiting for employment; the person lived in an institution (private or state-run) or nursing home, with 12 or more residents.

If there was any concern regarding the group to which the person should be assigned, the determination to include the person in one or another group or to exclude the person from the study was made based upon consensus between key project personnel. Because we used self-report measures of self-determination, life satisfaction, and autonomy, we limited the sample to people who could reliably complete such measures. Participants were recruited for participation based upon their current living or work environment as well as IQ, age, and gender. This process resulted in 91 matched groups (with a total of 273 people).

### *Participants*

Study participants were 273 people with mental retardation recruited based upon their current living or work situation, as described in the *Research Design* section. The mean age of the sample was 38.74 years (standard deviation [SD] = 10.78, range = 19 to 71). Their mean IQ was 61.48 (SD = 5.93, range = 50 to 75). The mean age and IQ for participants by setting (e.g., community-based, community-based congregate, noncommunity-based congregate) is provided in Table 1. There were 153 men (mean age = 40.10, mean IQ = 61.35) and 120 women (mean age = 37.01, mean IQ = 61.63). Participants were primarily recruited by chapters of The Arc in two large urban areas in the northeastern United States, although additional participants were identified through other service-providing agencies in states in the Midwest and Southwest. We attempted to form groups of matched participants

from the same recruiting agency, but on occasion groups were formed by matching participants from different states. Informed consent was obtained from all participants and, when appropriate, their guardians. Data were collected by staff members at collaborating agencies or at The Arc in face-to-face sessions with participants. When feasible, participants completed all measures in one session, which ranged in length from just over an hour to several hours. All participants were compensated for their participation by receiving a certificate for a meal at a preferred restaurant.

**Table 1**  
**Participants' Mean Age and IQ by Setting**

Setting	IQ		Age (years)	
	Mean	SD	Mean	SD
Community-based	61.71	6.09	38.46	10.51
Community-based, congregate	61.42	5.69	38.88	10.84
Noncommunity-based, congregate	61.30	6.06	38.89	11.08

### Procedure

*Instruments.* All participants completed two measures: The Arc's Self-Determination Scale: Adult Version (Wehmeyer & Kelchner, 1995a), and the Autonomous Functioning Checklist: Self-Report Version (Sigafoos, Feinstein, Damond, & Reiss, 1988; Wehmeyer & Kelchner, 1995b). Participants assessed in relation to their living arrangements also completed the Life Choices Survey (Kishi et al., 1988); those who were involved in the work sample completed the Lifestyle Satisfaction Scale (Heal & Harner, 1993).

*The Arc's Self-Determination Scale.* This instrument is a 72-item self-report scale that provides data on overall self-determination through measurement of individual performance in the four essential characteristics of self-determination identified by Wehmeyer et al. (1996). In Section 1, autonomy-including the individual's independence and the degree to which he or she acts on the basis of personal beliefs, values, interests, and abilities-is measured. The second section covers self-regulation and consists of two subdomains: (a) Interpersonal Cognitive

Problem-Solving and (b) Goal-Setting and Task Performance. In the first, a series of stories, each describing a problem and an outcome, is presented to the respondents, who identify the actions that best resolve the problem. Answers are scored based on the degree to which the solution achieved the outcome. Positive scores reflect more effective social problem-solving abilities. In the second subdomain, respondents identify goals for the future in three areas (where they live and work and what transportation they use). If respondents identify a goal, they are asked to list one to four steps they should take to achieve this goal. Positive scores reflect more effective goal-oriented behaviors.

The third section of the scale is an indicator of psychological empowerment, which consists of the various dimensions of perceived control. People who are self-determined take action based on the beliefs that (a) they have the capacity to perform behaviors needed to influence outcomes in their environment and (b) if they perform such behaviors, anticipated outcomes will result. Respondents choose from items measuring psychological empowerment using a forced-choice method. High scores reflect positive perceptions of control and efficacy. The final section measures self-realization. Self-determined people are self-realizing in that they use a comprehensive, and reasonably accurate, knowledge of themselves and their strengths and limitations to act in such a manner as to capitalize on this knowledge in a beneficial way. Self-knowledge forms through experience with and interpretation of one's environment and is influenced by evaluations of others, reinforcements, and attributions of one's own behavior. Respondents reply to a series of statements reflecting low or high self-realization by indicating that they agree or disagree with items. High scores reflect high levels of self-realization.

A total of 148 points is available on the scale, and higher scores reflect higher self-determination. The Arc's Self-Determination Scale was developed and normed with 500 adolescents with or without mental retardation (Wehmeyer, 1996). Concurrent criterion-related validity was established by showing relationships between this scale and conceptually related measures, including multiple measures of locus of control, academic achievement attributions, and self-efficacy. The scale has adequate construct validity, including factorial validity established by repeated factor analyses, and discriminative validity, as well as adequate internal consistency (Chronbach  $\alpha = .90$ ). Wehmeyer and Schwartz (1997) used the Adolescent Version of

the scale to group students with disabilities leaving high school according to relative self-determination status and found that grouping students based on scores from the scale predicted better adult outcomes for students in the high self-determination group one year later.

The Adult Version of The Arc's Self-Determination Scale is identical to the student version, with selected wording changes in questions to reflect adult outcomes (e.g., replace "school" with "work"). Because, however, the Adult Version was adapted from the Adolescent Version, and thus is slightly different, we conducted a factor analysis and examination of discriminative validity and internal consistency for the Adult Version, reported subsequently.

*Autonomous Functioning Checklist: Self-Report Version.* This 78-item scale is subdivided into four conceptually distinct subscales: Self and Family Care, Management, Recreational Activity, and Social and Vocational Activity. Questions in the first three domains describe activities, in response to which respondents select one of five alternatives: (a) do not do, (b) do only rarely, (c) do about half the time there is an opportunity, (d) do most of the time there is an opportunity, and (e) do every time there is an opportunity. The fourth domain contains questions with a yes/no format. Likert-scale responses are scored from 0 (*do not do*) to 4 (*do every time*), and dichotomous yes/no responses are scored 0 or 1, respectively. High total (out of 252 possible) and subscale scores indicate that an individual exhibits behaviors associated with autonomy. Sigafos et al. (1988) found that the subscales have high levels of internal consistency (coefficient  $\alpha$  from .76 to .86). There were consistent and significant correlations between each subscale and adolescent leadership experience (.21 to .36) and three of four subscales and number of extracurricular activities (.34 to .45), providing further evidence for construct validity.

*Autonomous Functioning Checklist.* This instrument was originally developed as a parent report measure for adolescents but was adapted by Wehmeyer and Kelchner (1995b) as a self-report measure for adults through presentation of instructions and items in first-person tense instead of second person. The 5-point Likert format used in the original scale was maintained, with responses made singular and first

person. Wehmeyer and Kelchner found that the factor structure of the Self-Report Version replicated that of the original version and that this version has adequate criterion-related validity.

*Life Choices Survey.* This survey, which has 10 items that are used to measure major life decisions and daily choices, was developed to evaluate daily living choices available to adults with mental retardation. Respondents answer on a scale indicating how often that they have the chance to make certain choices. The instrument is completed in an interview format and yields a total score reflecting overall choice opportunity. Stancliffe and Wehmeyer (1995) used the Life Choices Survey to measure choice availability for individuals with mental retardation, and Stancliffe (1997) used it to compare staff and resident perceptions of choice availability.

*Lifestyle Satisfaction Scale* (Heal & Harner, 1993). This self-report measure, designed to be completed by people with mental retardation, is used to assess satisfaction across home and community, free time and recreation, and employment domains. The Lifestyle Satisfaction Scale consists of 45 questions and is administered in an interview format. Based on directions in its manual, the administrator assigns a score for each response, ranging from -2 (*overwhelmingly negative response*) to +2 (*overwhelmingly favorable response*). Lower scores represent less satisfaction. The measure has adequate reliability and validity information pertaining to its use with people who have mental retardation (Heal & Harner, 1993).

### *Data Analyses*

A factor-analytic study examining the structure of the Adult Version of The Arc's Self-Determination Scale was conducted to examine its factor structure. Subsequently, analysis of variance by setting for IQs and age was conducted to ensure that the participants were equivalent in those factors. A second analysis of variance was conducted for the entire sample ( $N = 91$  matched cohorts) to examine differences between participants on scores from The Arc's Self-Determination Scale and the Autonomous Functioning Checklist. Finally, separate analyses of variance were conducted by setting for participants who completed the Life Choices Survey ( $n = 141$  or 47 matched cohorts) and the Lifestyle Satisfaction Scale ( $n = 132$  or 44 matched cohorts).

## Results

### *Factor Analysis of Adult-Version of The Arc's Self-Determination Scale*

Data were factored using a principal components analysis with eigenvalues greater than one retained for further analysis. Remaining factors were subjected to varimax rotation, with the resulting factor pattern analyzed for content. Criterion for item inclusion was a factor loading of at least .30, and a minimum of 3 items was required to establish a coherent theme. These steps replicated the factor analytic study for the Adolescent Version of The Arc's Self-Determination Scale.

Overall, there was considerable similarity in factor structure between the Adult and Adolescent Versions of the Self-Determination Scale. The Adolescent Version yielded nine factors overall, with four containing items exclusively from the Autonomy domain, three containing items from the Psychological Empowerment domain, and two from the Self-Realization domain. Because open-ended questions are used on the Self-Realization domain to which respondents write answers and not forced-choice or yes/no formats as do the other domain areas, the Self-Regulation domain cannot be factor analyzed. Initial analysis of the Adult Version yielded 18 factors with eigenvalues greater than 1.0, accounting for 58.5% of the variance. The rotated factor structure yielded eight factors for this version, with three containing items exclusively from the Autonomy domain, four from the Psychological Empowerment domain, and one from the Self-Realization domain. Two factors from the Adult Version matched factors from the Adolescent Version exactly, and the remainder shared numerous items. For example, the first factor for the Adult Version contained 63% of the total items represented in the first factor for the Adolescent Version and the second, third, and eighth factors contained 67% of the items from other factors from the Adolescent Version. More important, perhaps, was the factor structure for individual domains. Analysis of the items for the Autonomy domain yielded a 6-factor solution, compared with a 5-factor solution for the Adolescent Version. However, the six factors for the Adult Version corresponded exactly with the six subdomain areas in the scale, thus more closely matching the structure intended in scale construction than did the factor analysis for the Adolescent Version. Analysis of

the Psychological Empowerment section yielded two factors, one corresponding with perceptions of efficacy and outcome expectation and the second, to perceptions of control. Analysis of the Self-Realization section yielded four factors (compared to two factors for the Adolescent Version), but two factors from the Adult Version contained all items in a single factor of the Adolescent Version. In summary, the factor structure of the Adult Version was similar to the Adolescent Version and, in fact, was more closely aligned to the original test construction in the Autonomy domain.

One indicator of the criterion-related validity reported with the Adolescent Version was its relationship to similar measures, including the Adult Version of the Nowicki-Strickland Internal-External Scale (Nowicki & Duke, 1974), a widely used measure of locus of control, and, as with the Adolescent Version, total scores were significantly related to this measure,  $p = .01$ . Finally, coefficient alpha was .92 for this version, indicating adequate internal consistency reliability. In a previous study using the Adult Version of the scale, we found that people who scored higher (e.g., were more self-determined) were also more likely to score higher on a quality of life measure (Wehmeyer & Schwartz, 1998).

### *Impact of Environment on Self-Determination*

Analysis of variance by setting (e.g., community-based, community-based congregate, noncommunity-based congregate) indicated no significant differences between settings by either age,  $F(2, 270) = .046, p = .955$ , or IQ,  $F(2, 270) = .119, p = .888$ . Analysis of variance for scores from The Arc's Self-Determination Scale and the Autonomous Functioning Checklist yielded significant differences by setting on both measures. Groups differed significantly on the Autonomous Functioning Checklist,  $F(2, 270) = 7.145, p = .001$ . Post-hoc analyses using the Scheffe test indicated significant differences between people living or working in community-based settings and people living or working in community-based congregate settings (group homes, sheltered workshops),  $p = .003$ , and people living or working in noncommunity-based congregate settings (institution, nursing home, day program),  $p = .009$ . Groups also differed significantly on The Arc's Self-Determination Scale,  $F(2, 270) = 3.224, p = .011$ , with post-hoc analyses indicating significant

differences between people living or working in community-based settings and people living or working in community-based congregate settings,  $p = .025$ , and in noncommunity-based congregate settings (institution, nursing home, day program),  $p = .045$ . There were no significant differences between the congregate settings on either the Autonomous Functioning Checklist or the Self-Determination Scale. Figure 2 shows mean scores for each of these measures by setting.

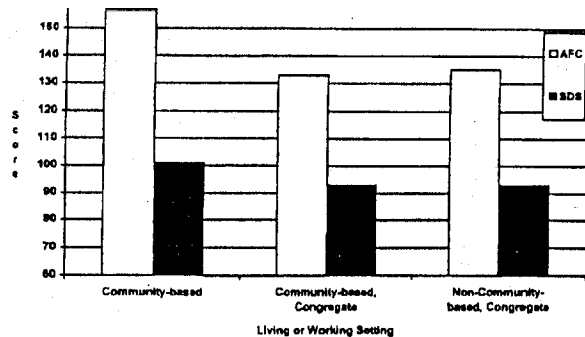


Figure 2. Mean scores for The Arc's Self-Determination Scale (SDS) and Autonomous Functioning Checklist (AFC) by setting.

Analysis of variance by settings on the Lift Choices Survey indicated highly significant differences by setting,  $F(2, 138) = 16.430$ ,  $p < .0001$ , with post-hoc analysis showing significant differences between people who lived in community-based settings and both people who lived in more restrictive settings (e.g., group homes),  $p < .0001$ , and who lived in the most restrictive settings (institutions, nursing homes),  $p < .0001$ , but no differences between people who lived in either congregate setting. Figure 3 is a graph of mean scores for the Life Choices Survey by setting.

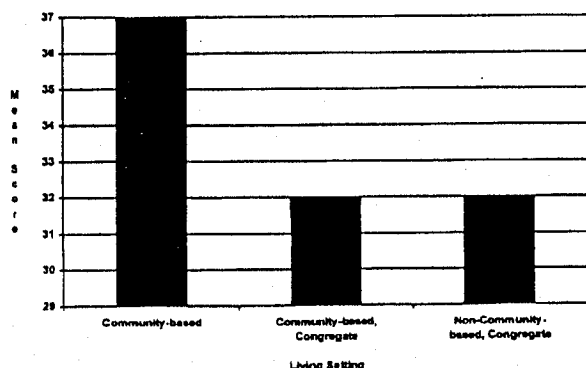


Figure 3. Mean scores for Life Choices Survey by setting.

Analysis of variance by settings on the Lifestyle Satisfaction Survey indicated significant differences by setting,  $F(2, 129) = 5.909$ ,  $p < .004$ , for total scores, with post-hoc analysis indicating significant differences between people who worked in community-based programs (competitive or supported employment) and people who were served in noncommunity-based congregate settings (day programs),  $p = .005$ . Because this subset of participants were interviewed in relation to their work environment, we were interested in the scores from the Job Satisfaction subscale and examined differences by setting for these scores as well. There were significant between-setting differences on this subscale,  $F(2, 129) = 71.731$ ,  $p < .0001$ , and post-hoc analysis indicated significant differences in satisfaction between the noncommunity-based congregate setting and both of the other settings (community-based, community-based congregate),  $p < .0001$ . These are depicted in Figure 4.

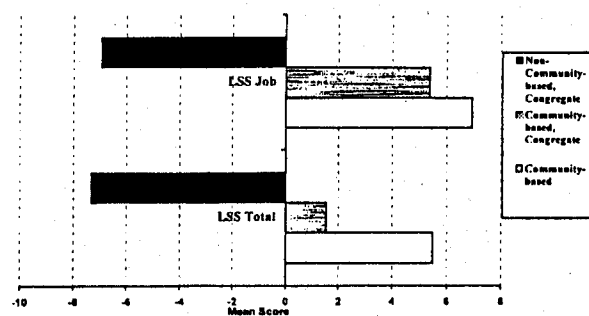


Figure 4. Mean total and Job Satisfaction subscale scores for Lifestyle Satisfaction Survey (LSS).

## Discussion

We believe that these results provide further information about the relationship between where one lives or works and the opportunity to express and further acquire self-determination. Results of this study show that level of intelligence is not the sole or even primary reason that previous researchers have linked congregate settings, both community-based and noncommunity-based, to decreased self-determination because persons in each triad were matched by age and intelligence score. The findings show that people who lived or worked in community-based settings were more self-determined, had higher autonomy, had more choices, and were more satisfied than were IQ and age-matched peers living or



working in community-based congregate settings or non-community-based congregate settings.

Before other implications of the study are discussed, there are a number of limitations we should address. First, this study does not provide evidence of a causal link between self-determination and environmental characteristics. In previous research investigators had confounded type of setting with level of intelligence, and we corrected for that by matching subjects on IQ. However, it is probably true that people who are more self-determined are more likely to live or work in community-based settings. As such, the differences in the settings on self-determination and autonomy scores could be a function of more autonomous and self-determined people living or working in community-based settings, whereas less self-determined and autonomous people continue to live or work in settings such as group homes, sheltered workshops, nursing homes, day activity programs, or institutions. Although we suggest that it is unlikely that "self-determination" per se is taken into account in most placement decisions and that factors such as IQ and adaptive behavior levels have greater weight in such processes, it is likely that people who are self-determined (i.e., causal agents who make things happen in their lives) will most likely strive to live and work in their communities.

A second caveat is that although we attempted to control for intelligence as a factor contributing to relative self-determination, the fact that we restricted the participants to people who could reliably complete self-report measures also restricted the range of intelligence scores (between 50 and 75), which limits our capacity to conclude that we fully controlled for intelligence as a factor of merit. Third, additional psychometric assessments are needed for both the Adolescent and Adult Versions of The Arc's Self-Determination Scale, particularly determination of test-retest reliability, to ensure its reliability and, thus, utility as a measure of global self-determination. Fourth, the relative self-determination of individuals is, obviously, influenced both by where one lives and where one works. The respondents in this study were included based exclusively on living *or* work settings, not living *and* work settings. It would have been advantageous to have people assigned to the setting groups because they lived and worked in community-based, community-based congregate, or noncommunity-based concrete settings. However, in

order to recruit a sufficiently large sample, we were unable to do so. As such, relative self-determination and autonomy, particularly for the community-based and community-based congregate groups, may have been impacted by the "other" setting, either living or work environment, not accounted for in this study.

Given these caveats, there are aspects of the study that could provide direction for future researchers. First, one evident difference in the settings was that the community-based congregate and noncommunity-based congregate settings were, without exception, facilities-based services, whereas community-based services focused on providing supports in one's community. The effort to provide individualized supports will, as suggested earlier, require that individual preferences and abilities be identified and supports designed based upon these factors. Such activities both enable people to express their self-determination by indicating preferences, making choices and decisions based on those preferences, and so forth, but also may promote self-determination by focusing on abilities and preferences in the first place.

Scores on the Life Choices Survey suggest that the environments differed in the amount of choices available to people served in those settings. There were no differences, however, in Life Choices Survey scores in the two congregate settings. This finding supports our bias that it is the lack of opportunity in these environments to make choices and decisions, express preferences, set goals, and generally take control over one's life that is at work in the present study and not just that self-determination status at time of placement or employment explains the findings. There is, however, a need to conduct research that controls for both intelligence and relative self-determination status to examine the causal relationship between environments and self-determination.

The primary message from the results of the present and previous studies is that the first, and perhaps most important, step in promoting self-determination is to support people to live, work, play, and learn in their communities. Like many aspects of the emergence of self-determination, there is, at least theoretically, a reciprocal relationship between experiences of control and choice-making and the development of self-determination. If individuals are supported to make choices, participate in decisions, set goals, experience control in their lives, and so forth, they will become

more self-determined. As they become more self-determined, they will be more likely to assume greater control; make more choices; hone their skills in goal-setting, decision-making, and problem-solving; and have greater belief in their capacity to influence their lives. This does not mitigate the importance of opportunities to learn more effective skills, such as goal-setting and attainment or problem-solving, in that only if individuals are prepared to take advantage of opportunities that become available to them will they experience the success necessary to assume further control. It does indicate, however, that efforts to unilaterally promote skills development without concomitant efforts to examine the environments in which people with mental retardation live and work will not be as successful as efforts that attempt to have an impact on both capacity and opportunity.

In the long run, however, results of this study reinforce the need to continue the commitment to support people to live and work in their communities. Although such efforts continue to move forward, there are states in which setbacks (see Braddock, 1998) have been experienced. Ironically, one of the reasons provided to support this slowdown has been the importance of ensuring "choice" for people with disabilities, including highly restrictive options (e.g., institutions). Such claims place undue emphasis on choice as a service delivery value, ignoring other equally important values (Ferleger, 1994), confuse the issue of whose choice is really emphasized, and ignore findings such as those reported in this study and in studies of institutional closures that the quality of life and self-determination of people with mental retardation are enhanced in the community and restricted in such settings.

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Received 6/26/98, first decision 8/29/98, accepted 11/23/98.

Editor-in-Charge: Steven J. Taylor

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