

The Effects of Choice and Enhanced Personal Responsibility for the Aged: A Field Experiment in an Institutional Setting

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A field experiment was conducted to assess the effects of enhanced personal responsibility and choice on a group of nursing home residents. It was expected that the debilitated condition of many of the aged residing in institutional settings is, at least in part, a result of living in a virtually decision-free environment and consequently is potentially reversible. Residents who were in the experimental group were given a communication emphasizing their responsibility for themselves, whereas the communication given to a second group stressed the staff's responsibility for them. In addition, to bolster the communication, the former group was given the freedom to make choices and the responsibility of caring for a plant rather than having decisions made and the plant taken care of for them by the staff, as was the case for the latter group. Questionnaire ratings and behavioral measures showed a significant improvement for the experimental group over the comparison group on alertness, active participation, and a general sense of well-being.

The transition from adulthood to old age is often perceived as a process of loss, physiologically and psychologically (Birren, 1958; Gould, 1972). However, it is as yet unclear just how much of this change is biologically determined and how much is a function of the environment. The ability to sustain a sense of personal control in old age may be greatly influenced by societal factors, and this in turn may affect one's physical well-being.

Typically the life situation does change in old age. There is some loss of roles, norms, and reference groups, events that negatively influence one's perceived competence and feeling of responsibility (Bengston, 1973). Perception of these changes in addition to actual physical decrements may enhance a sense of aging and lower self-esteem (Lehr & Puschner, Note 1). In response to internal

developmental changes, the aging individual may come to see himself in a position of lessened mastery relative to the rest of the world, as a passive object manipulated by the environment (Neugarten & Gutman, 1958). Questioning whether these factors can be counteracted, some studies have suggested that more successful aging—measured by decreased mortality, morbidity, and psychological disability—occurs when an individual feels a sense of usefulness and purpose (Bengston, 1973; Butler, 1967; Leaf, 1973; Lieberman, 1965).

The notion of competence is indeed central to much of human behavior. Adler (1930) has described the need to control one's personal environment as "an intrinsic necessity of life itself" (p. 398). deCharms (1968) has stated that "man's primary motivation propensity is to be effective in producing changes in his environment. Man strives to be a causal agent, to be the primary locus of, causation for, or the origin of, his behavior; he strives for personal causation" (p. 269).

Several laboratory studies have demonstrated that reduced control over aversive outcomes increases physiological distress and anxiety (Geer, Davison, & Gatchel, 1970; Pervin, 1963) and even a nonveridical percep-

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tion of control over an impending event reduces the aversiveness of that event (Bowers, 1968; Glass & Singer, 1972; Kanfer & Seidner, 1973). Langer, Janis, and Wolfer (1975) found that by inducing the perception of control over stress in hospital patients by means of a communication that emphasized potential cognitive control, subjects requested fewer pain relievers and sedatives and were seen by nurses as evidencing less anxiety.

Choice is also a crucial variable in enhancing an induced sense of control. Stotland and Blumenthal (1964) studied the effects of choice on anxiety reduction. They told subjects that they were going to take a number of important ability tests. Half of the subjects were allowed to choose the order in which they wanted to take the tests, and half were told that the order was fixed. All subjects were informed that the order of the tests would have no bearing on their scores. They found that subjects not given the choice were more anxious, as measured by palmar sweating. In another study of the effects of choice, Corah and Boffa (1970) told their subjects that there were two conditions in the experiment, each of which would be signaled by a different light. In one condition they were given the choice of whether or not to press a button to escape from an aversive noise, and in the other one they were not given the option of escaping. They found that the choice instructions decreased the aversiveness of the threatening stimulus, apparently by increasing perceived control. Although using a very different paradigm, Langer (1975) also demonstrated the importance of choice. In that study it was found that the exercise of choice in a chance situation, where choice was objectively inconsequential, nevertheless had psychological consequences manifested in increased confidence and risk taking.

Lefcourt (1973) best summed up the essence of this research in a brief review article dealing with the perception of control in man and animals when he concluded that "the sense of control, the illusion that one can exercise personal choice, has a definite and a positive role in sustaining life" (p. 424). It is not surprising, then, that these

important psychological factors should be linked to health and survival. In a series of retrospective studies, Schmale and his associates (Adamson & Schmale, 1965; Schmale, 1958; Schmale & Iker, 1966) found that ulcerative colitis, leukemia, cervical cancer, and heart disease were linked with a feeling of helplessness and loss of hope experienced by the patient prior to the onset of the disease. Seligman and his co-workers have systematically investigated the learning of helplessness and related it to the clinical syndrome of depression (see Seligman, 1975). Even death is apparently related to control-relevant variables. McMahon and Rhudick (1964) found a relationship between depression or hopelessness and death. The most graphic description of this association comes from Bettelheim (1943), who in his analysis of the "Muselmanner," the walking corpses in the concentration camps, described them as:

Prisoners who came to believe the repeated statements of the guards—that there was no hope for them, that they would never leave the camp except as a corpse—who came to feel that their environment was one over which they could exercise no influence whatsoever. . . . Once his own life and the environment were viewed as totally beyond his ability to influence them, the only logical conclusion was to pay no attention to them whatsoever. Only then, all conscious awareness of stimuli coming from the outside was blocked out, and with it all response to anything but inner stimuli.

Death swiftly followed and, according to Bettelheim,

[survival] depended on one's ability to arrange to preserve some areas of independent action, to keep control of some important aspects of one's life despite an environment that seemed overwhelming and total.

Bettelheim's description reminds us of Richter's (1957) rats, who also "gave up hope" of controlling their environment and subsequently died.

The implications of these studies for research in the area of aging are clear. Objective helplessness as well as feelings of helplessness and hopelessness—both enhanced by the environment and by intrinsic changes that occur with increasing old age—may contri-

bute to psychological withdrawal, physical disease, and death. In contrast, objective control and feelings of mastery may very well contribute to physical health and personal efficacy.

In a study conceived to explore the effects of dissonance, Ferrare (1962; cited in Seligman, 1975; Zimbardo & Ruch, 1975) presented data concerning the effects of the ability of geriatric patients to control their place of residence. Of 17 subjects who answered that they did not have any other alternative but to move to a specific old age home, 8 died after 4 weeks of residence and 16 after 10 weeks of residence. By comparison, among the residents who died during the initial period, only one person had answered that she had the freedom to choose other alternatives. All of these deaths were classified as unexpected because "not even insignificant disturbances had actually given warning of the impending disaster."

As Zimbardo (Zimbardo & Ruch, 1975) suggested, the implications of Ferrare's data are striking and merit further study of old age home settings. There is already evidence that perceived personal control in one's residential environment is important for younger and noninstitutional populations. Rodin (in press), using children as subjects, demonstrated that diminished feelings of control produced by chronic crowding at home led to fewer attempts to control self-reinforcement in the laboratory and to greater likelihood of giving up in the face of failure.

The present study attempted to assess directly the effects of enhanced personal responsibility and choice in a group of nursing home patients. In addition to examining previous results from the control-helplessness literature in a field setting, the present study extended the domain of this conception by considering new response variables. Specifically, if increased control has generalized beneficial effects, then physical and mental alertness, activity, general level of satisfaction, and sociability should all be affected. Also, the manipulation of the independent variables, assigning greater responsibility and decision freedom for relevant behavior, allowed subjects real choices that were not directed

toward a single behavior or stimulus condition. This manipulation tested the ability of the subjects to generalize from specific choices enumerated for them to other aspects of their lives, and thus tested the generalizability of feelings of control over certain elements of the situation to more broadly based behavior and attitudes.

METHOD

Subjects

The study was conducted in a nursing home, which was rated by the state of Connecticut as being among the finest care units and offering quality medical, recreational, and residential facilities. The home was large and modern in design, appearing cheerful and comfortable as well as clean and efficient. Of the four floors in the home, two were selected for study because of similarity in the residents' physical and psychological health and prior socioeconomic status, as determined from evaluations made by the home's director, head nurses, and social worker. Residents were assigned to a particular floor and room simply on the basis of availability, and on the average, residents on the two floors had been at the home about the same length of time. Rather than randomly assigning subjects to experimental treatment, a different floor was randomly selected for each treatment. Since there was not a great deal of communication between floors, this procedure was followed in order to decrease the likelihood that the treatment effects would be contaminated. There were 8 males and 39 females in the responsibility-induced condition (all fourth-floor residents) and 9 males and 35 females in the comparison group (all second-floor residents). Residents who were either completely bedridden or judged by the nursing home staff to be completely noncommunicative (11 on the experimental floor and 9 on the comparison floor) were omitted from the sample. Also omitted was one woman on each floor, one 40 years old and the other 26 years old, due to their age. Thus, 91 ambulatory adults, ranging in age from 65 to 90, served as subjects.

Procedure

To introduce the experimental treatment, the nursing home administrator, an outgoing and friendly 33-year-old male who interacts with the residents daily, called a meeting in the lounge of each floor. He delivered one of the following two communications at that time:

[*Responsibility-induced group*] I brought you together today to give you some information about Arden House. I was surprised to learn that many of you don't know about the things that are available to you and more important, that many of you don't realize the influence you have over your own lives here. Take a minute to think of the decisions you can and should be making.

For example, you have the responsibility of caring for yourselves, of deciding whether or not you want to make this a home you can be proud of and happy in. You should be deciding how you want your rooms to be arranged—whether you want it to be as it is or whether you want the staff to help you rearrange the furniture. You should be deciding how you want to spend your time, for example, whether you want to be visiting your friends who live on this floor or on other floors, whether you want to visit in your room or your friends' room, in the lounge, the dining room, etc., or whether you want to be watching television, listening to the radio, writing, reading, or planning social events. In other words, it's your life and you can make of it whatever you want.

This brings me to another point. If you are unsatisfied with anything here, you have the influence to change it. It's your responsibility to make your complaints known, to tell us what you would like to change, to tell us what you would like. These are just a few of the things you could and should be deciding and thinking about now and from time to time everyday. You made these decisions before you came here and you can and should be making them now.

We're thinking of instituting some way for airing complaints, suggestions, etc. Let [nurse's name] know if you think this is a good idea and how you think we should go about doing it. In any case let her know what your complaints or suggestions are.

Also, I wanted to take this opportunity to give you each a present from the Arden House. [A box of small plants was passed around, and patients were given two decisions to make: first, whether or not they wanted a plant at all, and second, to choose which one they wanted. All residents did select a plant.] The plants are yours to keep and take care of as you'd like.

One last thing, I wanted to tell you that we're showing a movie two nights next week, Thursday and Friday. You should decide which night you'd like to go, if you choose to see it at all.

[*Comparison group*] I brought you together today to give you some information about the Arden House. I was surprised to learn that many of you don't know about the things that are available to you; that many of you don't realize all you're allowed to do here. Take a minute to think of all the options that we've provided for you in order for your life to be fuller and more interesting. For example, you're permitted to visit people on the other floors and to use the lounge on this floor for visiting as well as the dining room or your own rooms. We want your rooms to be as nice as they can be, and we've tried to make them that way for you. We want you to be happy here. We feel that it's our responsibility to make this a home you can be

proud of and happy in, and we want to do all we can to help you.

This brings me to another point. If you have any complaints or suggestions about anything, let [nurse's name] know what they are. Let us know how we can best help you. You should feel that you have free access to anyone on the staff, and we will do the best we can to provide individualized attention and time for you.

Also, I wanted to take this opportunity to give you each a present from the Arden House. [The nurse walked around with a box of plants and each patient was handed one.] The plants are yours to keep. The nurses will water and care for them for you.

One last thing, I wanted to tell you that we're showing a movie next week on Thursday and Friday. We'll let you know later which day you're scheduled to see it.

The major difference between the two communications was that on one floor, the emphasis was on the residents' responsibility for themselves, whereas on the other floor, the communication stressed the staff's responsibility for them. In addition, several other differences bolstered this treatment: Residents in the responsibility-induced group were asked to give their opinion of the means by which complaints were handled rather than just being told that any complaints would be handled by staff members; they were given the opportunity to select their own plant and to care for it themselves, rather than being given a plant to be taken care of by someone else; and they were given their choice of a movie night, rather than being assigned a particular night, as was typically the case in the old age home. However, there was no difference in the amount of attention paid to the two groups.

Three days after these communications had been delivered, the director visited all of the residents in their rooms or in the corridor and reiterated part of the previous message. To those in the responsibility-induced group he said, "Remember what I said last Thursday. We want you to be happy. Treat this like your own home and make all the decisions you used to make. How's your plant coming along?" To the residents of the comparison floor, he said the same thing omitting the statement about decision making.

Dependent Variables

Questionnaires. Two types of questionnaires were designed to assess the effects of induced responsibility. Each was administered 1 week prior to and 3 weeks after the communication. The first was administered directly to the residents by a female research assistant who was unaware of the experimental hypotheses or of the specific experimental treatment. The questions dealt with how much control they felt over general events in their lives and how happy and active they felt. Questions were responded to along 8-point scales ranging from 0 (none) to 8 (total). After completing each inter-

TABLE 1
MEAN SCORES FOR SELF-REPORT, INTERVIEWER RATINGS, AND NURSES' RATINGS FOR
EXPERIMENTAL AND COMPARISON GROUPS

Questionnaire responses	Responsibility induced (<i>n</i> = 24)			Comparison (<i>n</i> = 28)			Comparison of change scores (<i>p</i> <)
	Pre	Post	Change: Post-Pre	Pre	Post	Change: Post-Pre	
Self-report							
Happy	5.16	5.44	.28	4.90	4.78	-.12	.05
Active	4.07	4.27	.20	3.90	2.62	-1.28	.01
Perceived Control							
Have	3.26	3.42	.16	3.62	4.03	.41	—
Want	3.85	3.80	-.05	4.40	4.57	.17	—
Interviewer rating							
Alertness	5.02	5.31	.29	5.75	5.38	-.37	.025
Nurses' ratings							
General improvement	41.67	45.64	3.97	42.69	40.32	-2.39	.005
Time spent							
Visiting patients	13.03	19.81	6.78	7.94	4.65	-3.30	.005
Visiting others	11.50	13.75	2.14	12.38	8.21	-4.16	.05
Talking to staff	8.21	16.43	8.21	9.11	10.71	1.61	.01
Watching staff	6.78	4.64	-2.14	6.96	11.60	4.64	.05

view, the research assistant rated the resident on an 8-point scale for alertness.

The second questionnaire was responded to by the nurses, who staffed the experimental and comparison floors and who were unaware of the experimental treatments. Nurses on two different shifts completed the questionnaires in order to obtain two ratings for each subject. There were nine 10-point scales that asked for ratings of how happy, alert, dependent, sociable, and active the residents were as well as questions about their eating and sleeping habits. There were also questions evaluating the proportion of weekly time the patient spent engaged in a variety of activities. These included reading, watching television, visiting other patients, visiting outside guests, watching the staff, talking to the staff, sitting alone doing nothing, and others.

Behavioral measures. Since perceived personal control is enhanced by a sense of choice over relevant behaviors, the option to choose which night the experimental group wished to see the movie was expected to have measurable effects on active participation. Attendance records were kept by the occupational therapist, who was unaware that an experiment was being conducted.

Another measure of involvement was obtained by holding a competition in which all participants had to guess the number of jelly beans in a large jar. Each patient wishing to enter the contest simply wrote his or her name and estimate on a piece of paper and deposited it in a box that was next to the jar.¹

Finally, an unobtrusive measure of activity was taken. The tenth night after the experimental treatment, the right wheels of the wheelchairs belonging

to a randomly selected subsample of each patient group were covered with 2 inches (.05 m) of white adhesive tape. The following night, the tape was removed from the chairs and placed on index cards for later evaluation of amount of activity, as indicated by the amount of discoloration.

RESULTS

Questionnaires. Before examining whether or not the experimental treatment was effective, the pretest ratings made by the subjects, the nurses, and the interviewer were compared for both groups. None of the differences approached significance, which indicates comparability between groups prior to the start of the investigation.

The means for responses to the various questionnaires are summarized in Table 1. Statistical tests compared the posttest minus pretest scores of the experimental and comparison groups.

In response to direct questions about how happy they currently were, residents in the

¹ We also intended to measure the number of complaints that patients voiced. Since one often does not complain after becoming psychologically helpless, complaints in this context were expected to be a positive indication of perceived personal control. This measure was discarded, however, since the nurses failed to keep a systematic written record.

responsibility-induced group reported significantly greater increases in happiness after the experimental treatment than did the comparison group, $t(43) = 1.96$, $p < .05$.² Although the comparison group heard a communication that had specifically stressed the home's commitment to making them happy, only 25% of them reported feeling happier by the time of the second interview, whereas 48% of the experimental group did so.

The responsibility-induced group reported themselves to be significantly more active on the second interview than the comparison group, $t(43) = 2.67$, $p < .01$. The interviewer's ratings of alertness also showed significantly greater increase for the experimental group, $t(43) = 2.40$, $p < .025$. However, the questions that were relevant to perceived control showed no significant changes for the experimental group. Since over 20% of the patients indicated that they were unable to understand what we meant by control, these questions were obviously not adequate to discriminate between groups.

The second questionnaire measured nurses' ratings of each patient. The correlation between the two nurses' ratings of the same patient was .68 and .61 ($ps < .005$) on the comparison and responsibility-induced floors, respectively.³ For each patient, a score was calculated by averaging the two nurses' ratings for each question, summing across questions, and subtracting the total pretreatment score from the total posttreatment score.⁴ This yielded a positive average total change score of 3.97 for the responsibility-induced group as compared with an average negative total change of -2.37 for the comparison group. The difference between these means is highly significant, $t(50) = 5.18$, $p < .005$. If one looks at the percentage of people who were judged improved rather than at the amount of judged improvement, the same pattern emerges: 93% of the experimental group (all but one subject) were considered improved, whereas only 21% (six subjects) of the comparison group showed this positive change ($\chi^2 = 19.23$, $p < .005$).

The nurses' evaluation of the proportion of time subjects spent engaged in various interactive and noninteractive activities was analyzed by comparing the average change scores

(post-precommunication) for all of the nurses for both groups of subjects on each activity. Several significant differences were found. The experimental group showed increases in the proportion of time spent visiting with other patients (for the experimental group, $\bar{X} = 12.86$ vs. -6.61 for the comparison group), $t(50) = 3.83$, $p < .005$; visiting people from outside of the nursing home (for the experimental group, $\bar{X} = 4.28$ vs. -7.61 for the comparison group), $t(50) = 2.30$, $p < .05$; and talking to the staff (for the experimental group, $\bar{X} = 8.21$ vs. 1.61 for the comparison group), $t(50) = 2.98$, $p < .05$.⁵ In addition, they spent less time passively watching the staff (for the experimental group, $\bar{X} = -4.28$ vs. 9.68 for the comparison group), $t(50) = 2.60$, $p < .05$. Thus, it appears that the treatment increased active, interpersonal activity but not passive activity such as watching television or reading.

Behavioral measures. As in the case of the questionnaires, the behavioral measures showed a pattern of differences between groups that was generally consistent with the predicted effects of increased responsibility. The movie attendance was significantly higher in the responsibility-induced group than in the control group after the experimental treatment ($z = 1.71$, $p < .05$, one-tailed), although a similar attendance check taken one month before the communications revealed no group differences.⁶

² All of the statistics for the self-report data and the interviewers' ratings are based on 45 subjects (25 in the responsibility-induced group and 20 in the comparison group), since these were the only subjects available at the time of the interview.

³ There was also significant agreement between the interviewer's and nurses' ratings of alertness ($r = .65$).

⁴ Since one nurse on the day shift and one nurse on the night shift gave the ratings, responses to the questions regarding sleeping and eating habits were not included in the total score. Also, in order to reduce rater bias, patients for whom there were ratings by a nurse on only one shift were excluded from this calculation. This left 24 residents from the experimental group and 28 from the comparison group.

⁵ This statistic is based only on the responses of nurse on duty in the evening.

⁶ Frequencies were transformed into arc sines and analyzed using the method that is essentially the

In the jelly-bean-guessing contest, 10 subjects (21%) in the responsibility-induced group and only 1 subject (2%) from the comparison group participated ($\chi^2 = 7.72$, $p < .01$). Finally, very little dirt was found on the tape taken from any of the patients' wheelchairs, and there was no significant difference between the two groups.

DISCUSSION

It appears that inducing a greater sense of personal responsibility in people who may have virtually relinquished decision making, either by choice or necessity, produces improvement. In the present investigation, patients in the comparison group were given a communication stressing the staff's desire to make them happy and were otherwise treated in the sympathetic manner characteristic of this high-quality nursing home. Despite the care provided for these people, 71% were rated as having become more debilitated over a period of time as short as 3 weeks. In contrast with this group, 93% of the people who were encouraged to make decisions for themselves, given decisions to make, and given responsibility for something outside of themselves, actually showed overall improvement. Based on their own judgments and by the judgments of the nurses with whom they interacted on a daily basis, they became more active and felt happier. Perhaps more important was the judged improvement in their mental alertness and increased behavioral involvement in many different kinds of activities.

The behavioral measures showed greater active participation and involvement for the experimental group. Whether this directly resulted from an increase in perceived choice and decision-making responsibility or from the increase in general activity and happiness occurring after the treatment cannot be assessed from the present results. It should also be clearly noted that although there were significant differences in active involvement, the overall level of participation in the activities that comprised the behavioral measures was low. Perhaps a much more powerful

treatment would be one that is individually administered and repeated on several occasions. That so weak a manipulation had any effect suggests how important increased control is for these people, for whom decision making is virtually nonexistent.

The practical implications of this experimental demonstration are straightforward. Mechanisms can and should be established for changing situational factors that reduce real or perceived responsibility in the elderly. Furthermore, this study adds to the body of literature (Bengston, 1973; Butler, 1967; Leaf, 1973; Lieberman, 1965) suggesting that senility and diminished alertness are not an almost inevitable result of aging. In fact, it suggests that some of the negative consequences of aging may be retarded, reversed, or possibly prevented by returning to the aged the right to make decisions and a feeling of competence.

REFERENCE NOTE

1. Lehr, K., & Puschner, I. *Studies in the awareness of aging*. Paper presented at the 6th International Congress on Gerontology, Copenhagen, 1963.

REFERENCES

- Adamson, J., & Schmale, A. Object loss, giving up, and the onset of psychiatric disease. *Psychosomatic Medicine*, 1965, 27, 557-576.
- Adler, A. Individual psychology. In C. Murchinson (Ed.), *Psychologies of 1930*. Worcester, Mass.: Clark University Press, 1930.
- Bengston, V. L. Self determination: A social and psychological perspective on helping the aged. *Geriatrics*, 1973.
- Bettelheim, B. Individual and mass behavior in extreme situations. *Journal of Abnormal and Social Psychology*, 1943, 38, 417-452.
- Birren, J. Aging and psychological adjustment. *Review of Educational Research*, 1958, 28, 475-490.
- Bowers, K. Pain, anxiety, and perceived control. *Journal of Consulting and Clinical Psychology*, 1968, 32, 596-602.
- Butler, R. Aspects of survival and adaptation in human aging. *American Journal of Psychiatry*, 1967, 123, 1233-1243.
- Corah, N., & Boffa, J. Perceived control, self-observation, and response to aversive stimulation. *Journal of Personality and Social Psychology*, 1970, 16, 1-4.
- deCharms, R. *Personal causation*. New York: Academic Press, 1968.
- Geer, J., Davison, G., & Gatchel, R. Reduction of stress in humans through nonveridical perceived control of aversive stimulation. *Journal of Personality and Social Psychology*, 1970, 16, 731-738.

same as that described by Langer and Abelson (1972).

- Glass, D., & Singer, J. *Urban stress*. New York: Academic Press, 1972.
- Gould, R. The phases of adult life: A study in developmental psychology. *American Journal of Psychiatry*, 1972, 129, 521-531.
- Kanfer, R., & Seidner, M. Self-Control: Factors enhancing tolerance of noxious stimulation. *Journal of Personality and Social Psychology*, 1973, 25, 381-389.
- Langer, E. J. The illusion of control. *Journal of Personality and Social Psychology*, 1975, 32, 311-328.
- Langer, E. J., & Abelson, R. P. The semantics of asking a favor: How to succeed in getting help without really dying. *Journal of Personality and Social Psychology*, 1972, 24, 26-32.
- Langer, E. J., Janis, I. L., & Wolfer, J. A. Reduction of psychological stress in surgical patients. *Journal of Experimental Social Psychology*, 1975, 11, 155-165.
- Leaf, A. Threescore and forty. *Hospital Practice*, 1973, 34, 70-71.
- Lefcourt, H. The function of the illusion of control and freedom. *American Psychologist*, 1973, 28, 417-425.
- Lieberman, M. Psychological correlates of impending death: Some preliminary observations. *Journal of Gerontology*, 1965, 20, 181-190.
- McMahon, A., & Rhudick, P. Reminiscing, adaptational significance in the aged. *Archives of General Psychiatry*, 1964, 10, 292-298.
- Neugarten, B., & Gutman, D. Age-sex roles and personality in middle age: A thematic apperception study. *Psychological Monographs*, 1958, 72(17, Whole No. 470).
- Pervin, L. The need to predict and control under conditions of threat. *Journal of Personality*, 1963, 31, 570-585.
- Richter, C. On the phenomenon of sudden death in animals and man. *Psychosomatic Medicine*, 1957, 19, 191-198.
- Rodin, J. Crowding, perceived choice, and response to controllable and uncontrollable outcomes. *Journal of Experimental Social Psychology*, in press.
- Schmale, A. Relationships of separation and depression to disease. I.: A report on a hospitalized medical population. *Psychosomatic Medicine*, 1958, 20, 259-277.
- Schmale, A., & Iker, H. The psychological setting of uterine cervical cancer. *Annals of the New York Academy of Sciences*, 1966, 125, 807-813.
- Seligman, M. E. P. *Helplessness*. San Francisco: Freeman, 1975.
- Stotland, E., & Blumenthal, A. The reduction of anxiety as a result of the expectation of making a choice. *Canadian Review of Psychology*, 1964, 18, 139-145.
- Zimbardo, P. G., & Ruch, F. L. *Psychology and life* (9th ed.). Glenview, Ill.: Scott, Foresman, 1975.

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