How to Make a Token Economy Work: Goals and Variables of Token Economies with the Institutionalized Mentally Retarded

Summer 1979

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HOW TO MAKE A
TOKEN ECONOMY WORK:
GOALS AND VARIABLES OF TOKEN ECONOMIES
WITH THE INSTITUTIONALIZED MENTALLY RETARDED

BY
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SPECIALTY PAPER
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Abstract

Token systems of reinforcement are an increasingly popular method of modifying the behavior of the institutionalized mentally retarded. The dramatic success of the token economy has resulted in its programmatic use without full consideration for the relevancy of treatment goals and the numerous variables that may contribute to the successful implementation and maintenance of the token economy. An examination of the treatment goals found in the existing literature reveals that two orientations presently exist: management/control and therapeutic/educative. Furthermore, a review of the literature reveals differing methods or variables may contribute to achieving a successful token economy with the mentally retarded. Several suggestions are advanced as to those goals and specific variables which may be important for successful implementation.
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Introduction

The token economy is a type of behavior modification program based on several major principles of operant conditioning. The primary objective of this procedure is to increase the frequency of clearly specified desirable behaviors in individuals exhibiting behavior judged to be inappropriate or deviating from norms acceptable to the general population. This therapeutic reinforcement system employs a generalized reinforcer, the token, as a tangible form of "currency". The token may consist of such items as a poker chip, check mark on a card, a ticket, points on a sheet, or a plastic credit card. Initially, the token is not automatically reinforcing. By repeatedly presenting the token prior to or along with reinforcing stimulus, the token becomes a conditioned reinforcer. When it is paired with a variety of events, it is referred to as a generalized conditioned reinforcer. The potency of the token derives from the numerous "backup reinforcers" which backup the token. Thus a token is viewed as a powerful item because it can purchase a variety of backup reinforcers, such as, candy, toys, or access to special events. The use of different types of backup reinforcers has become controversial, as is their potency necessary
to bring about the greatest change in behavior.

This miniature system (Coe, 1974) is similar to the economic system of payment for goods and services operating presently in the United States. Some differences are notable: (1) the token itself does not resemble United States currency and may be individualized, (2) token economies have been used primarily in institutions, mental hospitals, training centers, and school systems where tighter control of the reward system may occur than in the general economy (Kazdin, 1977).

The advantages of token systems are numerous. Administratively, it is not an expensive system to implement requiring expensive gadgetry or extremely specialized tools. Tokens may be dispensed by the staff of a facility to large groups of individuals on large wards with minimal physical or mental effort and therefore do not interfere with staff functioning.

Ayllon and Azrin (1968) have noted additional characteristics of the token economy that make it a useful vehicle for a behavioral intervention program: (1) the number of tokens can bear a simple quantitative relation to the amount of reinforcement, (2) tokens are portable, they can be held by the subject at all times and places, (3) no maximum number of tokens exists, versus food or water where satiation may occur, (4) tokens can be used
to operate machines that deliver reinforcement, (5) tokens are durable, (6) the token itself can be standardized, (7) tokens can be made unique so that they cannot be duplicated, (8) the token bridges the delay between desired response and delivery of reinforcement and thus maintains response, (9) tokens allow a response to be reinforced at any time or place, and (10) tokens can be administered without interruption of ongoing learning.

Token systems have been used advantageously in a number of settings. In focusing upon the retarded population it becomes evident that this particular group is concentrated in large institutions throughout the United States. Institutions such as these, lend themselves as appropriate settings for the token economies for a number of reasons. It has been documented that institutionalization may foster maladaptive behavior (Kazdin, 1977). Token economy programs would appear to have the potential to overcome or reduce the deleterious effects of institutionalization. Token economies reportedly result in increased discharge and/or lower readmission to institutions than custodial care (Kazdin, 1977). Also due to the sometimes involuntary commitment to institutions, an individualized treatment plan is required by law (Wyatt vs. Stickney, 1974). Thus the token economy, can serve as an individualized treatment modality during incarceration. Not only
is the token economy a miniature monetary system, it may be used in institutions which actually constitute miniature or micro societies. Within this modality strict control of contingencies, rates of exchange, and timing of reinforcement can be maintained by the staff of the institution.

Although it appears that the token economy may be a desirable system of behavior modification for retarded persons in institutional settings, a number of problems and important issues surround its implementation. Two areas are particularly relevant for study: first, the choice of appropriate target goals will be examined and secondly, the variables or methods of implementation which appear to contribute to the successful economy. These issues will be addressed within the context of the token economy literature with focus on the institutionalized retarded as the target population.

Therapeutic treatment or target goals constitute a relatively new attitude on the part of mental health professionals toward the institutionalized retarded. Until the 1960's retarded persons were considered incapable of benefiting from most types of therapy. Custodial care was the dominant philosophy and practice of institutions. Therapeutic goals were virtually non-existent. The United States legal system did not interfere with the few goals institutions set for their clientele, maintaining a
"hands off" policy (Martin, 1975). Judicial thinking tended toward believing that the "experts" within the institution knew what was best for their patients. As the rights of all individuals under the constitution came under scrutiny by the Supreme Court, institutionalized retarded clients also became entitled to due process in their treatment programs. The "experts" were required to justify certain treatment goals.

A landmark case, Wyatt versus Stickney (1974), detailed the minimum rights for the mentally ill and retarded. Some of the most relevant rights as they apply here to goal selection in the token economy are: the right to the least restrictive alternative; the right to informed consent; the right to maintain personal possessions; freedom from the requirement of performing institutional maintenance work, along with the provision to receive minimum wage if they volunteer for such work (residents may be required to perform housekeeping and therapeutic work tasks if they do not involve operation or maintenance of the institution); the right to bed and privacy; access to television and recreational facilities, adequate meals; adequate staff; an individualized treatment plan with timetable to meet specific goals; and specified criteria for discharge. "No resident shall be subjected to a behavior modification program which attempts to extinguish
socially appropriate behavior or to develop new behavior patterns when such behavior modifications serve only institutional convenience." (Martin, 1975, p. 179). Thus when goals of the token economy are selected by the administration, staff, and client they may not interfere with the client's right to the least painful method of intervention, right to know in advance what the methods will consist of, possessions may not be removed and "earned" back, all work must be reimbursed, and bed, television, food, and staff cannot become goals or privileges to be earned.

Martin (1975) further explained goal selection in the legal context. He insisted that a behavioral change goal must be of greater benefit to the individual than the institution and bring about the termination of the behavioral change program. The author states that the goals revolving around what is considered normal or appropriate within the institution are subjective and may reflect cultural differences. For example, the retarded population may be predominantly poor and contain a high percentage of minorities, while the administrators responsible for treatment plans may be white, upper middle class. Thus, Martin speculates that goal selection may not be appropriate for or resemble the culture to which the client returns.
Martin (1975) believes that the individual benefit is paramount in establishing goals. In order to test whether a goal is therapeutic/educative he recommends asking whether the goal is to change a behavior so that the individual becomes ready to leave the program or whether it is to make him a good maintenance worker for low pay? Self help goals are therapeutic/educative in nature if they are broken down into achievable steps, progress is noted, and the program is terminated upon achievement of a specific goal. Martin recommends focusing on the behavior that warranted institutionalization. Simply helping the individual to adjust to institutional living is "counter-rehabilitative" (p. 62). Martin recommends asking, 'Did this achievement primarily benefit the individual?' Suppression/control only asks 'Did the behavior occur?' It is highly desirable from a moral, legal and ethical standpoint that the target goals be therapeutic/educative. One of the purposes of this paper will be to examine the kinds of goals that have been reported in the literature, point out potential problems and suggest alternatives, where appropriate.

Selection of therapeutic/educative target behaviors is considered an essential prerequisite to the actual implementation of a behavior change program, but specific attention must also be directed to the variables that
contribute to an effective token economy. An examination of the existing literature reveals a number of different methods or procedures for implementing the token economy with the institutionalized retarded. The number of different components described in the literature lend support to the idea that a reliable set of conditions are not yet clearly established for use when implementing the token economy. This may reflect the complexity of the token system itself, or an insufficient sampling of the literature, or perhaps that the institutionalized retarded are such a select group so as to obscure precise identification of all relevant methodological factors.

A review and synthesis of the methodology and rationale for a particular type of variable considered to be important to successful token use will alert the reader to patterns of implementation that may enhance new or existing programs.

It appears essential that some basic components be identified in order to provide feedback to those presently engaged in token work where their energies may be best directed for maximum efficiency of the system.

Five areas or methodologies for consideration when implementing the token economy with retardates in institutions will be examined: staff training, backup reinforcers, social reinforcement, economic balance and savings, and intermittent reinforcement. These are not all possible
variables to be considered when implementing a token economy with the retarded. However, in the literature available for this study, these five areas appear to dominate. How these variables may influence and bring about behavior change will be evaluated and criticized. Lack of a sufficient number of experiments which isolate individual variables with the retarded in institutions impedes this search to some degree and therefore some conclusions are derived on a logical rather than experimental basis. These conclusions are meant to serve as a guideline for professions either engaged in implementing token economies with the retarded or who choose to further research this timely area. It appears essential that some basic components be identified in order to provide feedback to those presently engaged in token work where their energies may be best directed for maximum efficiency of the system. Those engaged in implementing token economies may or may not find that their programs resemble the results of this examination. Exploration of ongoing systems and comparison with these recommendations may prove fruitful to individuals and institutions by providing a basis for evaluation of ongoing systems. The importance of verifying successful components of token economies in institutions for the retarded cannot be overstated, since literally hundreds of thousands of individuals may benefit from clarification
and research of this behavior modification system.

Management/Control Goals

The existing literature reveals that target behaviors chosen by institutions for their retarded clients are divided into two categories: management/control and therapeutic/educative. First, the studies that appear to fall in the management/control category will be examined. Some authors focus on "disruptive" behaviors (examples are self-abuse, tantrums, etc.), while others focus on "ward care" behaviors (examples are cleaning floors, polishing furniture, clearing tables, etc.); still other authors focus on "self-care" behaviors (examples are dressing, toileting, bathing, brushing teeth, etc.). Self-care is included here in the management/control section although it is not always clear whether a chosen self-care goal is to manage or to educate the client. It is somewhat difficult to discern an institution's intent in this area. However, statements which only refer to staff convenience and fail to mention the benefit to the individual's welfare and/or increased level of adaptive functioning outside the institution may be construed as indicative of a management/control orientation.
Disruptive Behavior

Lachenmeyer (1969) describes the problems encountered with a token economy as he worked with the retarded in a large institution, Murdock Center for the Retarded in Butner, North Carolina. He clearly states that his report is based on informal observation. He identifies problem behaviors as extreme anti-social acts, such as setting fires, fighting and stealing, which "in some way caused difficulty for the attendants" (p. 248). He points out that the direct care staff philosophy on the token unit was to "minimize situations which caused them 'trouble'" (p. 248) by failing to supervise their clients adequately. He further states the administrative personnel of this unit were reported by the direct care staff to survey and control the residents with "surprise check" techniques. Lachenmeyer believes this method to be aversive and controlling. An example of the prevailing attitude was the fact that, "one did not interact with the inmates except for diversion or to punish and control" (p. 249). Clearly, this atmosphere was not therapeutic/educative. He points out that appropriate target behaviors were not selected for token reinforcement and recommends explicitly defining target behaviors, although he does not give any examples of the type of social or cooperative behavior desired. However,
his disapproval of the management/control goals at Murdock Center is readily apparent.

Thompson and Grabowski (1970) conducted a study on a ward at Faribault State School and Hospital, Minnesota where profoundly retarded, institutionalized patients were transferred because of "destructive and assaultive behavior, lack of basic self-care behavior, and/or self-abusive behavior" (p. 783). This operant conditioning program had consultants who specified terminal behavior for each constructive activity, with successive steps and criterion tests for success. The target goal "constructive activities" is not clearly described. Puzzles and flashcards are mentioned but specific examples of therapeutic goals are not mentioned. This creates some doubt as to the educational nature of these activities, of at least their importance in the overall program.

Self-care behaviors such as bathing, toileting and feeding were also trained. The goal of the program was to reduce disruptive activity. This is a negative, suppressive goal. Any mention of benefit to the client, such as preparation for deinstitutionalization, or termination of the program itself as mentioned by Martin (1975) is lacking. Indeed, these patients' behavior was modified to adjust to institutionalized living, which is not a legal, therapeutic goal. This could be construed as benefiting the institution.
more than the individual. Thompson and Grabowski emphasize positive consequences for staff, such as merit increases in pay, the fact that patients became more enjoyable to work with, and that technicians with the most daily programs could be first to choose from new materials. A similar list of benefits for clients is lacking. In summary, detailed therapeutic goals are lacking, as is any mention of benefits to the individual clients versus the staff.

Kuypers, Becker and O'Leary (1968) and O'Leary, Drabman and Kass (1973) used tokens to reduce deviant, disruptive behavior in children. Although these programs were conducted in special classes as opposed to institutions, the authors fail to delineate positive target goals for their programs. This may indicate a general trend in schools as well as institutions to use tokens as a method of suppressing or controlling behavior. Institutions for the retarded can learn from the mistakes of other institutions and may wish to take positive steps to insure that their programs are designed with the therapeutic benefit of the client as a priority.

Ward Care Behavior

Other studies illustrate a management orientation by choosing ward work (e.g., cleaning floors, polishing
furniture, etc.) as a target behavior.

Winkler (1973) conducted an experimental token economy on a very large ward of mentally deficient women. Among the target behaviors recorded and reinforced daily was ward work. Bath and Smith (1974), in a study of 45 retardates at the State Research Hospital, Galesburgh, Illinois, rewarded 30 minutes of "extra work" such as cleaning living areas, with marks redeemable for store articles and trips. Fielding (1972) implemented a token system of reinforcement at Faribault State Hospital, Faribault, Minnesota. "Industrial therapy" was targeted and included such behaviors as making own bed, mops floor, sweeps floor, moves furniture, cleans furniture, and does errands.

Institutions requiring such work in their token economies should be aware of the decision in the Wyatt versus Stickney case (1974) allowing freedom from institutional maintenance work and to receive minimum wage if they volunteer for this work. Residents may be required to perform housekeeping or work tasks only if they do not involve operation or maintenance of the institution. There is a need to further describe the ward work goals of these studies in such a way as to rule out possible infringement of client rights. These studies do not state that these goals are for the explicit purpose of program termination.
or adaptive functioning outside the institution; both of which would be reasonable therapeutic goals.

Self-care Behavior

The goal of self-care in the existing literature is frequently noted. Self-care is here defined from a management viewpoint, (i.e., bathing, toileting, feeding, etc.) which is designed to make the staff's job easier or more pleasant. The client's own benefit is not paramount. The client or those legally responsible for the client are typically not consulted in setting up contingencies.

Kazdin (1977) in an extensive review of the available literature on token economies states that the orientation and focus of many token programs on self-care skills is of unclear relevance to the goals of the institution (e.g., patient adjustment to the community, improved academic ability). This view is based on a large number of token studies. An examination of the following studies reveals a similar observation.

Brierton, Garms and Metzger (1969) rely heavily on self-care to structure their program at the Dixon State School in Dixon, Illinois. Behavior goals included room cleaning, with "white glove" inspection, and self-care, which included brushing teeth, showering, shaving, and shining shoes. A benefit noted by the authors is that the
"aides job is made somewhat easier because it becomes less necessary to spend time coaxing residents to perform certain necessary duties" (p. 41). This type of attitude may be detrimental to the belief that token programs are for the long term improvement of the clients. No such benefit is similarly noted about the residents in this study.

Girardeau and Spradlin (1964) established a token system in a retarded girls residential center at Parsons State Training Hospital and Training Center in Kansas. The stated goal was to use tokens to increase constructive, socially acceptable activities on the part of the residents. The authors state in the introduction to their study that they are aware of the shift in goals of residential centers from custodial care to training, education and rehabilitation. However, in spite of this statement, the authors seem to be exhibiting a tendency, mentioned by Kazdin (1977), to focus almost exclusively on self-care and ward care behaviors. The majority of items presented in a checklist (shower, comb hair, trim nails, clean bird cage, etc.) reflect this emphasis. These are legitimate goals and the authors may wish to balance these needs with realizable goals which eventually terminate the program. Martin (1975) suggests the law will not tolerate stagnant programming that fails to specify achievable goals.
In conclusion, in implementing their token economies some authors focus on management of the behavior of retarded individuals in institutions to meet the needs of the staff or the institution. Reduction of disruptive behavior, performing ward work and self-care behaviors are important to the functioning of the individual; but it may be possible to infer from the previously described studies that individual client benefit is not a priority, or at least is not clearly delineated in terms of the longer range therapeutic goals.

**Therapeutic/Educative Goals**

As a basis for comparison with the previously cited studies, we shall now turn to intervention programs that have chosen goals more specifically designated as educative or therapeutic. The goals which fall in this category are clearly stated as benefiting the individual and where the primary purpose is program completion and/or directed at adaptive functioning outside the institution.

As a guideline to effective goal setting, Gardner (1971) has articulated a wide range of behaviors available for education and rehabilitative efforts. He advised careful study in setting and choosing realistic and functionally meaningful program goals. He suggests that attention be directed to the following categories of deficit and excessive
behaviors: (1) specific task skill deficits, such as forgetting steps in a task; (2) task related deficits, such as continuous performance skills; (3) deficits in independent living skills, such as money handling, transportation, grooming; (4) social behavior deficits, such as failure to discern social stimuli; (5) affective behavior deficits, such as experiencing "social anxiety" to avoid dangerous or aversive situations; (6) deficits in self-direction and self-control, such as failure to internally cue and make decisions based on cueing; (7) excessive disruptive behaviors, either verbal or physical; (8) excessive social reactions, such as continuous attention seeking behavior; (9) excessive motor reactions that interfere with meaningful activity; and (10) excessive affective reactions that disrupt behavior patterns and disconcert others, such as excessive fearfulness, crying, aggressiveness, and laughing. Gardner believes that the retarded can learn a wide range of skills and that these goals should be carefully selected. The target behaviors he suggests are excellent guidelines to those planning token systems and represent a broadly educative approach to goal selection.

Some of these recommendations have been implemented and we now turn to a group of studies which select goals of an educational/therapeutic nature which they "teach" to their retarded institutionalized clients and reward those efforts
to learn with tokens. These behaviors can be divided into two major areas: verbal behaviors and social behaviors.

**Verbal Behaviors**

Token reinforcement has been used to alter a number of verbal behaviors; including language acquisition, amount of speech, loudness of speech, singing, or simple imitation of mouth movements and sounds.

Jackson and Wallace (1974) succeeded in modifying and generalizing voice loudness in a 15 year old retarded girl using token reinforcement. The subject was also severely withdrawn. Experimental sessions took place in a four foot by four foot cubicle using a sophisticated voice operated relay (VOX). A token dispenser was located within her cubicle. Conditioning consisted of saying 100 monosyllabic words loudly enough to operate the VOX. Later, polysyllabic words, and finally five or six words were necessary to obtain a token. Baseline, shaping, reversal, reinstatement and generalization training to classroom took place.

This study demonstrates appropriate therapeutic goal choice and used highly controlled procedures to obtain behavior change. The authors believe that as voice loudness generalized from the individualized treatment setting to the classroom, the subject developed some appropriate verbal
behaviors that continued through the school year, such as smiling, playing with others and initiating verbal interactions. Reinforcing this goal with tokens may have contributed to increased adaptive functioning in other areas. The authors carefully chose a target behavior which was preventing the child from constructive verbal interaction with others. They carefully trained the behavior in achievable steps and generalized it to the extra-treatment setting. It must be noted that this intensive, individualized treatment is not feasible for most institutions because of time, cost and insufficient personnel. However, the goal was appropriately chosen and was implemented in careful, measurable steps. Termination occurred when the program criteria was achieved.

The Thompson and Grabowski study (1970), mentioned earlier in this paper, used operant procedures with institutionalized retarded clients at the Faribault State School and Hospital in Minnesota. While the target behaviors largely consisted of the management type, apparently some verbal training was initiated, although the method is not stated: "Verbal training was not stressed early in the program. However, as behavioral control developed, the training of imitation of mouth movements, sounds and words was emphasized to a greater degree" (p. 784). If indeed they believe verbal behaviors
are adaptive goals worthy of focus for the personal success as the client moves toward functioning outside the institution, they fail to state this.

Dileo (1975) applied a token economy system in teaching institutionalized retarded persons music appreciation, participation, rhythm, melody and words to songs in music therapy class. The experiment took place at Belle Chasse State School, Belle Chasse, Louisiana with 16 members of the senior chorus (CA 13-19, IQ 50-70). There is a careful description of the appropriate behaviors which will be rewarded with tokens (e.g., learning the words, rhythm, and melody of a new song, remembering music terminology for one week, etc.). The author chose to apply the token economy to music therapy where individuals could methodically improve their practice and enjoyment of music. Thus, the individual's satisfaction and benefit is viewed as the primary consideration, for it is somewhat difficult to see how the staff or institution would directly benefit from better musical abilities on the part of the clients.

Social Behaviors

"Social behaviors", also labeled social interactions or social skills in other studies, refer to a system of communication and participation between persons consisting of roles, values and patterns of interrelating generally
acceptable to society. Some of the examples labeled "socialization" in the literature include teaching group play and proper use of leisure time (Girardeau and Spradlin, 1964), meeting dress standards (Hunt, Fitzhugh and Fitzhugh, 1968), conversation (Kazdin and Polster, 1973), independent living skills (Sibbach and Ball, 1977), touching (Ribes-Inesta, Duran, Evans, Felix, Rivera and Sanchez, 1971), ordering from a menu (Roberts and Perry, 1970), and decision making (Krasner, 1970 and Gardner, 1971).

Girardeau and Spradlin (1964) noted the need for social activities as an important part of the daily functioning of the retarded but did not emphasize it in the program that was reported. They stated that they planned on including homemaking and general social skills necessary to function well within the community as part of their future program. These treatment goals included such behaviors as asking directions, using the telephone, writing and mailing letters, and washing and ironing clothes. The authors did note their clients' additional desire for educational type tasks and started a small classroom where they trained color naming, cutting paper, and drawing. The authors' intent here to implement and amplify these goals for client benefit is highly desirable but they are "still in a very elementary stage of this aspect of the program" (p. 347). They correctly assess that their clients
are motivated and capable of a greater number of creative social tasks than initially determined.

Hunt, Fitzhugh and Fitzhugh (1968) also recognized the need for institutionalized retarded persons to make adequate social/vocational adjustment as they approached reassignment to the community. At New Castle Indiana State Hospital, clients could earn points for appropriate dress and appearance standards which would be accepted by the community. Twelve residents of an "exit cottage" with IQ's ranging from 49-88 participated. Hunt, Fitzhugh and Fitzhugh (1968) chose this educative goal of social behavior for the following reason: "Not infrequently, institutionalized patients acquire certain idiosyncrasies or other inappropriate behaviors in connection with personal appearance that label them as retarded, and in fact, often focus the attention of others upon their retardation" (p. 41). The authors believe that the progress of the retarded person in the community may be hampered if personal appearance conflicts with social norms. Their concern for and treatment of a problem relating to adaptive functioning outside the institution is indeed a therapeutic/educative endeavor.

Kazdin and Polster (1973) chose "interacting socially with peers" at the Shore Training Center in Evanston, Illinois as a target goal for token reward. Two male
retardates age 21 and 28 with IQ's of 84 and 75 respectively who were already participating in a token economy in their sheltered workshop were selected because of withdrawn, isolative behavior. The goal of sociability or conversation was clearly defined as interactions where participants used declarative statements on varying subjects and obtained verbal responses from the person with whom they conversed. Simple questions and answers were not sufficient to be rewarded with tokens. This study clearly specifies what educative target behavior is desired. This study is of value to the understanding of token system goals with the institutionalized retarded in that it fully describes its therapeutic goals and systematically attempts to bring about appropriate change for the benefit of the individual.

In a recent study with educative/rehabilitative target goals for institutionalized retarded, Sibbach and Ball (1977) implemented a token economy at the Pacific State Hospital for the Mentally Retarded in Pomona, California. Self-care and toileting skills were already accomplished by the participants. Target goals consisted of refinement of independent living and social skills (e.g., washing and ironing clothes, setting the table for meals, improved appearance and hygiene, and learning appropriate social responses on the job). The goal of the program was
community placement. Clearly, the emphasis is on productive, useful, independent skills for coping with life outside the institution. The authors stress that the success of their program is due in part to this comprehensive, long-term goal setting. At the end of the first year, a 29 per cent discharge rate was noted. "Although subsequent discharge rates have been lower, reflecting changes in the TEP resident population, community placement has proved to be a realistic goal" (p. 156).

Adequate long-term goal setting is viewed as an important survival factor by Sibbach and Ball. They appear committed to serving the individual's growth as a viable member of the community and have attempted to arrange the contingencies to insure that this takes place. They are also to be commended from an ethical and legal standpoint for involving the guardian by acquiring consent and actually providing instruction in behavior modification techniques. Through this training the parents would understand and implement the specific techniques when their child returned home and thus further insure that the generalization process was not left to chance.

In another study focusing on socialization, Ribes-Inesta, Duran, Evans, Felix, Rivera and Sanchez (1971) used tokens with retarded children from the Center for Training and Special Education of the University of Veracruz, Mexico.
The subjects were selected on the basis of their limited behavioral repertoires. The target behavior was the most primitive type of communication and socialization, making physical contact by touching an adult with any part of the body. The children, whose ages ranged from five to fourteen, were withdrawn and barely articulate. Three out of the four children selected already had experienced token use.

The authors view tokens as a way of scheduling the behavior of staff who provide social reinforcement within the token system, not as a way of "controlling" the individual who receives them. This is a unique perspective, an indication that the authors are indeed concerned with therapy/rehabilitation not management control of their retarded subjects. They express the viewpoint that responsibility for education and behavior change falls squarely on the staff, not the residents of the institution.

Krasner (1970) implemented a token economy with institutionalized schizophrenics and organic brain involved patients. While the population represented is not specifically labeled "retarded", the study is worthwhile mentioning for the clarity and appropriateness of its choice of goals and is potentially an excellent model for institutions with retarded clients. The program took place at the Veterans Administration Hospital, Palo Alto. The goals of the
program were presented as: (1) shaping and guiding desirable behavior of patients; (2) helping patients live productive, satisfying, responsible lives; (3) maximizing staff satisfaction and minimizing annoyances; (4) exploring the possibility of lasting productivity in the institution; (5) teaching patients several roles of good citizenship; (6) teaching patients decision making (benefits of fitting into society); (7) teaching patients how to control their interactions with others; and (8) providing training in behavior modification to staff. This is an extremely comprehensive long-term goal plan in comparison to other studies. It represents a clearly therapeutic orientation where teaching, as well as management functions, is the most important part of the token system. Staff benefits are not valued above the needs of the clients.

In a comprehensive "total token economy" conducted at the Mental Retardation Center, Pueblo, Colorado, Roberts and Perry (1970) chose numerous educative target behaviors to be increased. The institution espouses two beliefs, that laws of behavior apply to all individuals, retarded or otherwise, and secondly, that the task of the personnel in a mental health or retardation center is to teach. The stated therapeutic goals are to develop behavior repertoires which (1) allows community placement and (2) enables the clients "to lead happier, fuller lives within the institution..."
primary function of the institutional personnel is neither
custodial nor nursing" (p. 15).

The Mental Retardation Center implemented a token
program for the entire retarded population, who numbered
approximately 400, and all patients, personnel, programs,
departments and wards were involved. Some of the targeted
behaviors were shaving, brushing teeth, combing hair,
feeding self, ordering from a menu, helping others,
ignoring undesirable behavior in others; clearer
diction, and increases in vocabulary. Desirable target
behaviors in the school room included persistance,
appearance upon arrival at school, and explicit improvement
in academic work. Thus numerous target behaviors were
chosen with the resident as the primary beneficiary.

However, in their enthusiasm to educate the residents,
control of all aspects of the individual's life in the
institution is suggested: "Each resident in the non-profound
and severe halls must earn at least $5.50 in tokens per day
in order to buy his meals, rent his room or bed, etc"
(Roberts and Perry, 1970, p. 17). The authors do not
mention what becomes of the resident who fails to earn this
arbitrary amount of money. "All room, board, clothing, and
recreation must be earned as well as items for personal
hygiene and privileges to use or leave the grounds" (p. 17).
From a legal and ethical standpoint, this type of control may
infringe upon the individual's right to bed and meals.

This points to the need for careful deliberation in the structure of the token economy. It is not enough to set appropriate goals, as this institution did. The method of implementation decides whether or not the overall benefit of the token economy accrues primarily to the individual retardate or mistakenly serves his caretakers. Most importantly, by law client rights must be accommodated. The Robert and Perry study (1970) illustrates how infringement of rights may be taking place for hundreds of clients in institutions.

In summary, a number of authors have emphasized verbal and social skills as therapeutic goals. The difference between therapeutic/educative and management/control target goals is first suggested in the differing methods of implementation. The management of behavior generally fails to consider (1) the individual's benefit as paramount, (2) that the goal must be concrete and achievable, and (3) that when the treatment goal is achieved the program is terminated. Secondly, the long-term plan or philosophy of the institution can decide whether a token economy is to manage or teach the individual. Teaching the individual skills for his sole benefit so that he will move closer to adaptive functioning outside the institution is therapeutic. The lesser goal of adjustment may be a more controlling philosophy.
Implementation of the Token Economy

This section is devoted to discovering what procedures or methods contribute to the successful implementation and functioning of the token economy with the institutionalized retarded. The previous section described the importance of selecting therapeutic/educative target goals within the token structure. However, effecting a successful token economy requires more than merely selecting target behaviors. Many different procedures are indicated in the literature which need to be addressed. These may directly effect the efficacy of a program. Discussion will include: (1) training staff and behavior change agents to implement contingencies, including keeping records and using administrative support for decision making; (2) constructing back-up reinforcers which enhance responsiveness; (3) the use of social reinforcement; (4) noting conditions which effect economic balance and savings; and (5) the scheduling of intermittent reinforcement. Many of the authors to be cited believe that full consideration of multiple variables is important to the success of the token economy.
Staff Training

Behavior change agents or staff may include attendants, aides, teachers, parents, spouses, peers or anyone else who is responsible for administering contingencies in any setting. As most of the studies to be cited take place within institutions for the retarded, staff refers here to attendants or aides on the ward. These non-professional staff are responsible for reinforcing, punishing and extinguishing behavior. These conditions must be delivered in a consistent fashion. Staff need to be carefully trained to control the consequences they administer. (Kazdin, 1977)

In a 1968 study of classroom behavior, Kuyper, Becker and O'Leary attempted to clarify the important components of effective token systems. They tried to reduce "deviant" behavior using tokens with socially maladjusted children. "Deviant" behaviors were defined as behaviors likely to be incompatible with group learning conditions. Staff consisted of a teacher and three undergraduate observers. While no statistical data is presented, the authors state their token system was statistically effective; however, "the real failure in this experiment was the failure to give the teacher sufficient support and information to keep her working with the researchers so that subsequent phases of the study could demonstrate more definitively the importance of additional procedures" (p. 108). The teacher was not
trained in behavioral principles such as shaping. Also, the observers distracted the participants and teacher with whispering and gum chewing. Thus, the authors recommend controlling these problems with proper training and screening of staff. While this study did not involve institutional clients or staff, its implication for that setting is quite apparent in that there are generally more staff per client in large institutions than in classrooms.

Bath and Smith (1974) also consider inconsistent personnel to have a profound effect on client performance in the token economy. Their study consisted of giving red and black marks for desirable and undesirable behavior to a group of female retardates at the State Research Hospital of Galesburg, Illinois. The authors report the program was approximately equal in effectiveness for all residents. They observe significant change toward desirable behavior over a 60 week block of time and provide graphs demonstrating the gain in red marks for desirable behavior over time as well as showing the mean net gain in desirable behavior. A drop in performance in week 24 is stated as being "directly attributable to a change in ward personnel at week 24" (Bath and Smith, 1974, p. 42). Performance again improved once consistency of staff was achieved through program familiarity. "Until a permanent attendant was assigned to the ward around the beginning of Block 5 and until she
became familiar with the program, performance by the residents continued to be poor" (p. 42). The authors support this conclusion with anecdotal rather than statistical evidence. They report resident complaints increased during Blocks 3, 4 and 5 when new staff were added. The new staff were noted as making remarks considered resistant, such as stating they didn't have time to learn the program because they were just becoming familiar with the residents and that they didn't want to give out black marks. The consistency variable on the part of the staff "should again be emphasized, since it appears to play a large role in the success or lack of it in a token economy program. Practitioners would be well advised to pay close attention to this variable in efforts to maximize positive outcome" (p. 43).

Kuypers, Becker and O'Leary (1968) and Bath and Smith (1974) both recognize poor staff performance as contributing to decreased program effectiveness. Neither study had attempted to systematically control staff proficiency through standardized training procedures, and thus, in retrospect, it seems their methods of training staff were somewhat fragmented and inadequate. They do recognize that knowledge of behavioral principles and techniques by staff would have served to enhance their studies and may have actually confounded their results. Unfortunately, neither
study details how to actually improve the quality of staff performance in terms of time, techniques or performance criteria.

These studies pointed to staff inconsistencies as problematic and strongly effecting their data. The next group of articles are important for their strong rationale and logical conclusions based on other studies. Few experiments are readily available which isolate staff training as a specific variable important to the token economy with the institutionalized retarded. However, based on their seemingly logical approach to this issue of staff training, their anecdotal conclusions are included here for scrutiny.

Grabowski and Thompson (1972) spent a number of years as consultants at the Faribault State Hospital in Minneapolis, Minnesota. They implemented a large-scale behavior modification program, notably in the Dakota Building for adult male retardates. Before this recovery project, staff were ill-informed of behavioral change techniques. Thus, after the project, the authors had a large amount of data and experience from which to draw their conclusions about staff training in institutions for the retarded.

Grabowski and Thompson recognized that feedback to staff was essential and should be frequent and positive.
Social recognition for administration, consultants and staff could aid in continuing performance. The authors also point out that discussions of problems are important, so that employees feel that they are contributing. Training procedures mentioned include lectures and application of principles in formal and informal groups. Staff were requested to write out a program completely, select a resident and perform the program. Use of practicum, films, and modeling of effective programming was encouraged. During inservice training the staff were requested to bring in baseline data and devise a program. Verbal oriented staff instructed fellow staff, using performance-oriented staff as providers of reinforcement. The authors informed all staff at Faribault about the principles, methods and goals of behavior modification to aid in the distribution of relevant materials throughout the institution. This appears to be a relatively complete, specific and comprehensive methodology for staff training. Thus, thorough communication throughout the institution and especially between trainers and staff is encouraged.

Lachenmeyer (1969) worked with the antisocial retardates of Murdock Center, Butner, North Carolina. He was also primarily concerned with staff behavior. He describes the staff training as consisting of a brief course in behavior modification techniques for the attendants, periodic staff
conferences, and collection and analysis of data for which the attendants were responsible. Lachenmeyer notes that the staff failed to supervise and control contingencies on the ward, failed to practice what was taught to them, and did not deal consistently with several types of response classes of their clients. He recommended tightening contingencies on the staff. This would involve specifying target behaviors of clients and procedures of implementation of the token economy. The author suggests this could best be achieved by on-the-job training in behavior modification techniques, surveillance of staff, data collection and frequent contact with behavioral engineers. A more detailed description would be needed for those contemplating staff training, but the point is similar to the previous study where more quantitative and qualitative contact between engineers and ward staff is deemed highly desirable. Thus, time spent in thoroughly training staff may contribute to program success.

A number of authors went into detail regarding the types of materials useful in training an employee to work well within a token economy with the retarded. Foreyt (1976) recommends lectures, films, informal group discussions, and modeling. He suggests a two week training session as sufficient introduction for covering behavior modification and program goals. He suggests the following
topics during inservice: What is mental illness?, rights of residents, principles of behavior modification, accountability, strengthening and weakening behaviors, general principles of a token economy, individual behavioral prescriptions, and mechanics of a token economy. As a valuable aid in maintaining morale, he stresses weekly indepth training sessions of the entire treatment team. This process must be continuous, as "staff training never ends" (p. 155).

Brierton, Rogers and Metzger (1969) also realized that providing staff with more information about retardation and behavior modification and soliciting their involvement through suggestion would further the success of the token economy. They stress the participation of the aides from program inception, using staff suggestions whenever possible. Their involvement could be augmented through regular conferences where aides explore their rehabilitative efforts. Client progress should be made visible to the staff as reinforcement for their efforts. It logically follows that the more the staff know about this specific area and the more feedback they receive on their efforts, the more intelligently they can implement programs and correct any problems that arise.

Watson (1976) sees the lack of well developed staff reinforcement program as "particularly grave in residential
institutions for the mentally retarded or mentally ill" (p. 69). He selects operant methodology to train staff. A practical application of training would include the following rewards for high quality work: recognition of work, privileges, time off and money. In order to gain or earn these things the staff member must show accountability and responsibility for his/her own work on the ward, ranging from teaching or training clients to recording data. In order for each staff person to have a clear picture of his/her area of responsibility, Watson requests each staff member receive a list of all duties required of him/her. Also a hierarchy of reportage in channels of communication should be clear to the employee so as to guarantee the smooth flow of information throughout the system. The author's requests seem reasonable and logical and place responsibility for the success of a program on both parties, the administration/trainers and the employee. Providing staff with sufficient information about job duties and being held accountable for those duties is deemed essential for a successful program in institutions for the retarded.

Kazdin and Bootzin (1972) consider the training of staff as effective behavioral engineers a crucial part of an effective token economy. They point out that some untrained staff have done very well; however, a highly trained staff is clearly advantageous. They support Watson's contention
that sufficient reinforcement for staff is highly desirable. They recommend as possible incentives to staff involvement, increased salary, time off, shift preferences, and tokens for beer at the end of the day. These suggestions by Kazdin and Bootzin (1972) and Watson (1976) may be difficult to implement in most large institutions which operate on tight budgets and where time off is detrimental to client care because of understaffing, and where shift preferences have long waiting lists based on seniority. Rewarding staff with money and time off have a very powerful effect on staff behavior. The feasibility of these training methods must be evaluated in terms of each institution's resources.

Coe (1974) also considers the method of implementation of staff training to be crucial with the token economy. "Probably the most important consideration in deciding whether or not a token economy will be useful is not so much the behaviors to be changed, but whether or not the counselor is in a position to arrange for the consequences of his clients' behavior (p. 52). Like Grabowski and Thompson (1972) and Foreyt (1976), Coe recommends lectures, films, readings and demonstration as training methods which may place the counselor (i.e., staff) in a position of knowing and understanding contingencies and how to apply them so as to bring about behavior change. In order to insure staff proficiency, Coe recommends modeling and role playing as
methods through which staff competency may be demonstrated. As staff actually begin to implement their training, monitoring and providing additional reinforcement will continue to improve staff effectiveness. In addition, Coe recognizes that staff who are unable to accept the behavior modification orientation or find it difficult to change their ways of viewing behavior may be very uncomfortable with the active nature of the behavioral approach. "It is probably better that these people be assigned elsewhere. Not only is the token program likely to suffer from their participation, but they will be personally dissatisfied as well" (p. 72). While no statistical basis for this is stated, it is generally known that unhappy staff may not produce the same quantity and quality of programming as a more happy, contented staff. Coe is cognizant that even in well-trained staff, poor attitude may be detrimental to the token economy and is a logical factor worthy of consideration.

Kazdin (1977) compiled a comprehensive review and evaluation of the token economy in numerous populations and settings. These included the psychiatric and retarded populations, delinquents, students, offenders, addicts, and geriatric clients. Settings included the home, mental hospital wards, institutions for the retarded, classrooms and other types of incarceration. In studying these numerous
and diverse studies, Kazdin discussed and recommended ways of overcoming obstacles to effective programs. These are generalized recommendations for any population and setting which may utilize the token economy and thus may be less specific than needed for the institutionalized retardate, but represent the major findings to date.

Kazdin discusses these main techniques to overcome obstacles and supports his conclusions with numerous studies. These are: (1) instructional techniques, (2) feedback to staff, (3) social reinforcement of staff, (4) token reinforcement of staff, (5) modeling and role playing, (6) self monitoring, and (7) combined techniques. He agrees with the previous studies mentioned that the components of successful economy need to be identified for staff. He further suggests that staff training take the form of a separate modification program using the above listed methods. These will be briefly explained.

Kazdin cites instructional methods such as lectures, discussions, inservice training, workshops and course work as the most frequently used with the token economy. He warns however that simply instructing staff without accompanying practical training does not appear to be sufficient to change staff behavior. This is an important statement, for it points out that the methods he and others are suggesting must take a particular form, i.e., they must
be acted out, concretized, actually performed before they will become a part of the employee's repertoire.

Feedback to staff may consist of verbal, written or videotapes as to the adequacy of staff performance. Kazdin (1977) cites seven studies which indicate that increased feedback resulted in better performance with retarded children. However, he notes three authors who report little or no effect of feedback. Thus, this method deserves more scrutiny than other methods because of conflicting statistical evidence.

Praise, approval and attention, prescribed by Kazdin as social reinforcement of staff, appears to increase positive behavior dramatically, especially with teachers. A study by Seymour and Stokes (1976) which has importance for the institutionalized population was noted, where clients were taught to solicit reinforcement from the staff. When the staff were nearby, the girls in this study called attention to their work which increased staff delivery of reinforcement. This is apparently a viable method for institutionalized clients but which needs more statistical support.

A fourth method of teaching staff appropriate programming is through token reinforcement. This is consistent with the well documented fact that token programs can be very effective with different populations, even staff.
Use of trading stamps and cash appears to dramatically alter staff performance in large institutions in a positive direction. Kazdin supports this with the Bricker, Morgan, and Grabowski (1972) study which noted a 700% increase in staff-client interaction when the staff of the institution were rewarded with trading stamps.

Role playing and modeling are training techniques in which individuals rehearse the behaviors that are going to be used in the reinforcement program. (Kazdin, 1977) It can be easily seen how this could apply to the token program in institutions. If staff could be trained and practice giving tokens at the correct time, place and for proper target behaviors, a more effective economy may well be the result. While this technique is not frequently used, Kazdin suggests it may be a valuable technique, because of dramatic results in classrooms, wards, and homes. Although this technique is not popular, Kazdin was able to cite eight supporting studies and apparently no detractors.

Self-monitoring has received mixed praise in the literature Kazdin describes. In self-monitoring, the staff member records the number of times he/she gives positive and negative feedback, instruction and suggestion. When staff had ready access to this information, the frequency of praise, token delivery and instructions all increased. However, Kazdin reports that in general "the effects of
self-monitoring as a behavior change technique have been weak, transient, and often non-existent in a plethora of self-monitoring studies: (p. 145). Thus, this is another training technique to be used with extreme caution, especially in institutions for the retarded, where staff have a difficult time keeping pace with the basic paperwork on their clients, much less documentation of their own behavior.

It becomes clear that these different methods of staff training exert a complex effect on the final product, effective staff and client performance. The extent to which these variables interact is not yet known. Also, a number of investigators have combined the above mentioned techniques with success. It appears to be left to the individual programmer and the specific population and setting to determine the exact type of staff training which will have the greatest positive effect. It is hoped that by examining these methods in some detail that the reader has an increased understanding of the techniques involved and their individual efficacy for the token economy.

As a related issue, and one in which staff need training, is record keeping. Ayllon and Azrin (1968) felt that recording of data, such as reinforcement given and behavior emitted, is extremely important. Verbal as well as tangible rewards need to be recorded to plot a given client's progress.
The authors recommend recording the type, amount and duration of rewards, as well as the time and place when this occurred. They point out appropriately that there is no possibility of correction or growth if one has no idea what went right or wrong. The authors take their conclusions from the Anna State Hospital, a large state mental hospital. While they do not present statistical data to support this hypothesis, it can be readily seen that a system can only be as good as its records. Proof that behavior has shown a measurable change due to the specified intervention is desirable and indeed may represent an ethical requirement. Extending this a step further, to be accountable for one's program could conceivably reduce questions regarding abuse of rights i.e. lawsuits against institutions.

Watson (1976) also recognized the importance of data as a source of feedback to evaluate a program. He recommends (without statistical support) that a concise, economical system across time, such as a graph summary system, can be easily interpreted to survey behavior and assess training programs. These can be frequently revised, allow for quick troubleshooting and identification of problems which can be quickly addressed. Periodically, they can be reduced and recorded on the client's record for progress purposes. This same system is recommended by
Watson for use by the administration to record staff behavior and training. This appears to be a reasonable and efficient method of recording data. Attention to data recording is thus seen to be useful to token systems in institutions for the retarded. The progress of clients over time, evaluation of staff performance and assessment of staff training methods may allow for revision and thus improvement of the program.

An important issue which is closely related to staff training is administrative support. Lachenmeyer (1969) became aware of this issue as he worked with the antisocial retardates of Murdock Center. Lachenmeyer was frustrated in his efforts to gain administrative support. He believes the administration looked upon his unit as a "depository" for troublemakers. In addition, he could not elicit administrative support for certain activities, such as a coed dance. He suggests that in order to obtain cooperation from the administration, the administration must perceive the utility of the token system for the entire institution. How one would set about bringing this type of perception to the administration is not addressed. The author gives examples of times when administration cooperation could have benefited the clients such as the coed dance. He states that he is well aware that this problem is not easily solvable.
Thompson and Grabowski (1972) describe administrative support in token economies in this manner: "There is little doubt that enthusiastic support from high-level administrators is the single most crucial factor in establishing a behavior modification program within an institution" (p. 272). They hold this view because administrators have potential to hire consultants, obtain supplies, authorize goals for staff, and reinforce staff. The authors recommend reinforcing outstanding staff performance, engaging in direct communication with staff and periodic visits by administrators to units. At Faribault, one administrator worked the night shift for several weeks. The authors believe staff will become more tolerant toward administrators with this approach. The administrative chain of command must be clear and supported at each level through public statements, follow-ups and interaction with other staff. The administration must insure financial support to the best of their abilities to the token program in terms of having sufficient supervisory personnel. Detailed and specific ways to request administrative support of the token economy are given. They stress that administrative interest, concern and a willingness to communicate are essential.
Watson (1976), as mentioned earlier, stresses the accountability/responsibility system of staff reinforcement. The duties of all staff members, including administrators, should be clearly defined. A flow chart of responsibility/accountability for the institution from resident to superintendent is given, including the author's concern that all members of the institutional community are involved. While not extremely detailed this particular account of how to administer and support all levels throughout the hospital is clear and useful.

Kazdin (1976) encourages administrative input for the token programs (especially target behaviors and selection of contingencies), reporting of program results to the administration, and maintaining clear data to aid in obtaining administrative support for the token economy. While these suggestions are not as detailed and elaborate as those of Thompson and Grabowski (1972), the three areas noted, if thoroughly implemented and carried out, would certainly increase administrative support of the token economy.

Thompson and Grabowski (1972) also devote considerable space to the role of the consultant in token programs in institutions. These individuals may train, monitor, troubleshoot and perform other functions within the program.
They recommend 18 guidelines for consultants (e.g., accepting the fact that the program belongs to the institution not the consultant, sensitivity to "channels", avoiding rigidity and boredom, etc.). This list is very helpful in avoiding potential pitfalls when utilizing resource people who are not regular staff members.

Thus, staff training is seen to be a multifaceted endeavor, consisting of techniques for administrators, staff, consultants and clients. The relevancy of these methods is not highly disputed and thus, are worthy of inclusion in the working token economy. While not statistically supported by large groups of studies, the majority of authors have logically reasoned that highly trained and motivated staff do the best job of creating and maintaining a token economy with retardates. If indeed these are logical deductions, it is of great importance that they be statistically validated, so that continued improvement in the quality of life for these institutionalized persons may take place on a solid foundation of data and experience.
Backup Reinforcers

Backup reinforcers are events which tokens can purchase. These events may take diverse forms, ranging from consumables (e.g., food, cigarettes, candy) to high frequency behaviors (e.g., visiting friends, watching television), to select tangible items such as clothes, cosmetics, appliances and luxuries. Tokens may purchase backup reinforcers prized in the institutional setting such as access to special activities and extra time with doctors and psychologists. Prices are usually arranged so that the more prized backup events cost a greater amount of tokens thereby providing an incentive for earning.

The subject of backup reinforcers is important when discussing the token economy. Backup reinforcers are an important motivating factor for clients within the token economy, although documentation is sadly lacking in this area. In addition, manipulation of backup reinforcers may enhance the amount of control over behavior which is desired by those administering the token economy. Unfortunately, the desirability of having adequate backup reinforcers is not generally recognized, for very few studies are available which isolate this variable in an experimental context. However, some authors working for some time within institutions for the retarded, or with token systems, have
made some logical deductions from their own experiences. Their conclusions will be presented.

In addition, it may be seen that backup reinforcers are closely related to economic balance and savings, a variable to be discussed shortly. It is evident that the quantity of backup reinforcers available to clients may seriously hamper continued behavior advancement if carelessly manipulated by staff. Several authors note that backup reinforcers, after initially becoming generalized, may be reduced for staff, administrative, and financial convenience as well as producing the greatest behavior change and maintenance for the least amount of reward. Some authors will be mentioned who would prefer that backup reinforcers become largely intrinsic as the token problem advances into the later stages. These views will be discussed in the context of the following individual studies.

First, authors who describe the actual use of backup reinforcers will be presented. Their descriptions of their techniques will serve to illustrate the method of applying backup reinforcers to a token system. How a backup reinforcer may best be chosen and applied will be discussed, as well as examples of backup reinforcers.
Neisworth and Smith (1973) studied contingency management in the classroom using the token as a generalized reinforcer. Usually an adult, teacher, therapist or parent dispenses tokens to the students. The authors define the potency of a backup reinforcer as dependent upon the length of deprivation (is the child satisfied with candy?), the availability of other reinforcers (e.g. salty peanuts may be rejected if salty food has just been ingested), and the amount of work required (the person may give up if the task is too difficult or the reward too small). They appropriately state that a variety of backup rewards should be provided and illustrate this with a list of 43 events and tangible items to insure that something will be interesting to a client at any given moment. "With the right backup consequences, tokens will quickly become valuable. They will become stable, effective, generalized reinforcers which may be used to reinforce any behavior at just the right moment" (p. 111).

The authors' methodology for selecting reinforcers includes asking the client and varying the selection regularly to insure an attractive array. He cautions against letting reinforcers get "stale". He recommends slowly establishing their value in small increments. Initially just a few tokens are necessary to earn the desired object, and gradually the number of tokens required
to obtain the desired object is increased. Two different methods of redeeming tokens are suggested, at will and at "store" times daily or weekly. The authors recommend a special location, no conflicting events, and a calm atmosphere. They recognize the "gimmicky" side of their program and even advocate an occasional "sale" to generate excitement and encourage savings, even constructing layaway plans to motivate the clients. These innovative ideas and systematic ways of bringing them about indicate a thorough, behavioral approach to the token economy. The authors approach is original and structured to bring about the greatest possible amount of behavior change in their clients.

Foreyt (1976) undertook a token economy program at Florida State Hospital, Chattahoochee, Florida. He suggests that tight control of backup reinforcers can also take place on special cards. To eliminate some of the problems encountered in institutions where patients may beg, hoard and steal tokens, they used this punch card system where increased control over earnings and spendings could take place. It consists of three sections, tokens earned, tokens spent, and tokens fined. The "tokens earned" section lists various activities that the patient may engage in to earn points, "tokens spent" includes all privileges requiring points, i.e., backup reinforcers, and "tokens fined" lists
inappropriate costly behaviors. Staff punch these cards as needed during the day. Each night the assigned staff member collects the cards and totals each one, records data and prepares a new card for the following day. This system maintains a high degree of control over its participants. It may violate the rights of the individual, in that room, food, aspirin and all services or activities must be earned. However, the punch card system appears viable, as backup reinforcers are individualized and frequently revised.

Some authors disagree with these previously mentioned techniques for implementing of backup reinforcers within the token economy. They believe that natural, intrinsic reinforcers are better for classroom and institutional use but unfortunately have not been able to validate these claims empirically. From a logical standpoint, it would seem reasonable that using the least amount of reinforcement to effect behavior change would be highly desirable, both financially and in terms of staff manhours. However, this has not been carefully and methodically undertaken in terms of controlling the economic factor or backup reinforcers.

Coe (1974) in describing the successful token economy, recommends reducing the number of tokens given and substituting natural reinforcers (such as praise, money) for them. Systematically delaying backup reinforcement to approximate
reinforcement outside the institution is suggested. The author enumerates complaints against tangible reinforcers (e.g., the philosophy that they are bribes, extrinsic versus intrinsic reward is detrimental, tangible reinforcers teach avarice and bad behavior, and are too manipulative and interfere with learning). The author does address only the bribery issue, stating that tokens are used to influence behavior but not in corrupt or immoral ways.

O'Leary, Drabman and Kass (1973) recommend using the smallest reward possible in token economies so that long-term maintenance will occur as tokens are removed. They contend that strong material rewards suddenly removed result in deterioration of appropriate behavior. This is not in keeping with the economic concept of primary deprivation creating the conditions under which appropriate behavior increases. They also admit that the use of natural reinforcers (i.e., reinforcers available to any classroom teacher such as free time in an activity area) needs empirical validation.
Levine (1974) agrees with O'Leary, Drabman and Kass (1973) that natural intrinsic reinforcers should be sought out before extrinsic ones so as to increase the value of the activity. He cites several studies which support this viewpoint. Both authors raise the valid issue of maintenance of behavior after strong backup reinforcers are no longer available. Considerable research needs to be done before any type of backup reinforcer can be determined to be more useful than another.

Finally, a number of problems or obstacles in regard to backup reinforcers have come to light. A number of authors have made suggestions for overcoming these problems. Unresponsiveness on the part of the client to the backup reinforcer can be a major obstacle to the economy. The majority of authors do not accept the idea that the client is unresponsive, per se, but rather that the individual backup reinforcer needs modification.

Kazdin and Bootzin (1972) make a general reference to backup reinforcers as it relates to clients who fail to respond to the token economy. Their conclusions are derived from a large scale evaluative review of the literature available at the time. They state that they do not believe
that this resistance or failure to respond is intrinsic but rather, may depend on the extrinsic reinforcement used. Greater strength or value of backup reinforcers is suggested by the authors, as well as individualizing the client's token menu, and consulting the client in setting up his own program. These authors point out that the individual preferences and dislikes of the client must be taken into consideration.

Kazdin (1973) addresses the issue of clients who fail to respond to token systems, i.e., "unresponsive" clients. He states that, "this is not to imply that these populations are incapable of behaving in a predictable fashion, or have immutable deficits that necessarily impede progress" (p. 10). One of his explanations for this unresponsiveness is the "lack of functional backup value of the rewards for them (patients)" (p. 10). He suggests that when the patient fails to respond, but then responds when backup reinforcers are altered, it may be that reinforcer strength accounted for the difference. Suggestions to improve client responsiveness to reinforcers include: (1) exposure to a portion of the backup reinforcer such as food or movie; (2) alteration of the backup value of the reinforcement; (3) response priming or prompting where discriminative stimuli which precede the desired response are focused upon; and (4) modeling of the
desired behavior.

Kazdin (1977) elaborated further on his premise that individuals who do not respond initially to a token program may readily respond when the contingencies are altered. He would augment the responsiveness of clients to reinforcement contingencies (in addition to response priming and reinforcer sampling) by selecting increasingly potent reinforcers, modeling of target behaviors and using individualized contingencies or group administration of consequences. He points out that his conclusions are not yet fully determined, "the limiting conditions of token reinforcement contingencies and their many variations remain to be determined" (p. 163).

Another problem area is the organization and distribution of backup reinforcers within the institution by the staff. Allyon and Azrin (1968) note that staff often have many residents under their care and have difficulty finding the time to reward their clients. The authors believe that, "rewards in mental hospitals are inherently difficult to implement and next to impossible to record and supervise, whether they be social in nature -- such as verbal approval or material in kind such as cigarettes" (p. 13). It's also clear that levels of savings and spending (satiation and deprivation) are difficult to control.
Oftentimes, when clients deserve a walk, candy, cigarettes for their efforts, the availability of staff and supplies may preclude their receiving such reinforcers. In other words, Ayllon and Azrin realized that institutions had not yet organized their backup reinforcers to such an extent that they were to be depended upon. No times, places, supplies were set up to insure that clients were certain of receiving accurate reward for their efforts. The authors see this as a very severe problem.

Thus, it may be seen that two main types of problems are involved with the use of backup reinforcers. "Unresponsiveness" may actually indicate a need for revisions of the reinforcers so as to be more nearly approximating what is reinforcing for the client. Secondly, the staff revising the program to best motivate the client, must also provide the time and place for backup reinforcers to be delivered.

Social Reinforcers

Most researchers recommend social reinforcement as useful to the token economy. However, they have failed to isolate it empirically, resulting in confusion as to when and how to use social reinforcement.

Social reinforcers are conditioned reinforcers such as verbal praise, attention, physical contact, facial expressions, and proximity. These are easily administered by staff.
Little preparation or time is necessary and social reinforcers do not interfere with ongoing activity. Praise can be delivered to a group. It may be a generalized reinforcer because it can be paired with many reinforcing events and is less subject to satiation than food or candy. Behavioral training which includes social reinforcement may be maintained more readily after tokens are faded than if it had not been used. Lastly, social reinforcement occurs naturally in the environment. One disadvantage is that not all persons, especially institutionalized persons, may have been conditioned to social reinforcement. In this case, it is imperative to pair praise, approval and physical contact with events that are already reinforcing. (Kazdin, 1977)

In an attempt to isolate the variable of social reinforcement, Ribes-Inesta, Duran, Evans, Felix, Rivera and Sanchez (1973) chose to teach withdrawn, retarded children to touch an adult through the use of tokens. This was an attempt to assess the effects of tokens and social reinforcement in a social situation. Three of the four children were token wise. Baseline recordings were taken for each child during four 30 minute sessions on consecutive days. The frequency of physical contact was also recorded. Four experimental conditions were administered to all four children. Sessions were half an hour long and
were run twice daily with a 30 minute break between them. Three variables were manipulated independently: (a) primary reinforcers, (b) tokens and (c) social reinforcement. The four different treatment conditions were: (a) social reinforcement paired with tokens having no exchange value; (b) social reinforcement paired with tokens having exchange value; (c) social reinforcement presented independent of tokens which had no exchange value; and (d) social reinforcement presented independent of tokens which had exchange value.

To obtain target behavior, an adult sat in a chair, ignoring the child to prevent prompting. Every time the child made physical contact with the adult, he would receive a token; or token and "very nice" and pat on the head; or just receive a token every three minutes; or token every time touching took place but experimenter remained non-attentive and also turned his/her face away.

The author's results lead him to conclude that, "the reinforcing effects of tokens (when attained) seem to depend in some cases on the social reinforcement simultaneously provided" (p. 127). The author posits that when we deliver tokens we are actually providing social reinforcement that itself may account for behavior change. The author raises pertinent questions to whether the client may need to be receptive to social stimuli for tokens to be
effective with him/her. The relationship between social reinforcement and token reinforcement appears to be complex and needs additional research.

Kupers, Becker and O'Leary (1968) did a study of tokens in the classroom setting. In attempting to reduce "socially maladjusted" behavior they concluded, "it is probably very important to use differential social reinforcement at all times. Explicitly, this involves giving praise and privileges for improvement in behavior" (p. 108). The authors do not offer this conclusion based on hard data, but as a logical interpretation of the verbal interactions which took place between teacher and students within the token context and resulted in positive behavior change.

Both researchers suspect positive social reinforcement may aid behavior change if used efficiently within the token economy. However, the method and timing of using such a variable within the economy is still unclear and may confound results in experiments where it is not controlled.

**Economic Balance and Savings**

The token economy is a complex economic system of controlling behavior. It resembles the economic system of payment for goods and services operating in the United States, except that the token itself is not a product of the United
States mints, but rather individual institutions, such as mental hospitals, training centers, school systems, and institutions for the retarded. Token economy programs reportedly exert control in the reduction of institutionalized behavior (Kazdin, 1977). For these reasons the economic variable within the token economy deserves considerable attention. How does manipulating the amount of tokens earned and spent influence behavior in negative or positive directions? Research is lacking in this "extremely relevant" area. (Kazdin, 1977) Closely related is the previously mentioned variable, backup reinforcement. Mention will be made of this connection in individual studies.

Brierton, Garms and Metzger (1969) in their study at the Dixon State School, a large institution for the retarded, Dixon, Illinois concluded that a surplus of tokens in the hands of their clients resulted in decreased performance. The authors admit they did not perform a statistical comparison of behavior before and after token rewards were introduced, but concluded that great behavioral change took place from baseline levels. While changes in behaviors obviously took place, it was perhaps mistakenly attributed to tokens. The project was not performed in a rigorous, experimental manner. The authors associate performance drop with increased tokens. No reversal design or a control group is mentioned. Many confounding factors
may have influenced subject performance, since it is stated that reinforced behaviors were changed throughout the project. Events, time, maturation and instrumentation may confound this study. "During the fifth week of token reinforcement seemingly inexplicable drops occurred in most of the behaviors being reinforced. A later compilation of data revealed that during this week an average of more than 700 tokens had been accumulated by the clients. It appeared probable that subjects who had large numbers of tokens on hand would not expend much effort to accumulate more tokens" (Brierton, Garms and Metzger, 1969, p. 42). While statistical or experimental measures would need to be performed to substantiate this statement, it appears logical that a very large number of tokens earned may have contributed to decreased performance. Mention of the cost of backup reinforcers is not made. It is conceivable that if prices had risen in conjunction with increased earnings, behavior would not have decreased.

Winkler (1973) made a notable contribution to this question of economic variables. In a large psychiatric hospital in Australia, he undertook five experiments to examine the role of savings and economic balance in a token system for chronic psychiatric patients. The first two experiments are of primary importance here.
In Experiments I and II the author varied savings independently of economic balance. A baseline of a wide variety of institutionalized behavior was obtained. In Experiment I a different currency was used for three weeks and prices were reduced, resulting in all savings being reduced to zero. In Experiment II the same conditions operated except that prices remained unchanged, c'est a dire savings were reduced to zero and rose more slowly than in the first experiment due to higher priced items. Results of these two experiments are shown in graphs, with performance tasks such as showering and bedmaking. An improved performance in such tasks is shown when savings are reduced. Thus, "these experiments indicate a close relationship between savings and token earning behaviors" (p. 31). The author is suggesting that the economic balance does not directly change client's behavior except through their level of savings. It may be that these results could be generalized to include the retarded population. The population studied here was diverse, consisting of schizophrenics and mentally deficient persons. The range of behaviors measured were also widely varied. Thus, these results may need to be used very carefully if applied to a population specifically designated as retarded. Another factor which may lead to a hesitancy to wholly accept these results is that the sample size varied throughout the experiment, ranging from 55 to 66
due to illness and leaves of absences and this may confound results to some extent.

Winkler postulates that the mechanism of savings effects suggests a process of deprivation and satiation. Tokens control access to reinforcing events (primary reinforcers) and "low savings creates primary deprivation and high savings allow primary satiation. Hence, savings control primary deprivations" (p. 32). He admits this is in the hypothesis stage and needs empirical validation.

Winkler states that based on his studies, "the controlling power of token systems deteriorate rapidly under high savings and increase rapidly under low savings" (p. 38). While this appears reasonable, the mechanism is not clear; it may be due to primary deprivation level. The ramifications of this may be that in order to maximize effectiveness, considerable care should be taken to control savings. When an increase in certain rewarded behaviors occurs, the client's income increases. If this system is allowed to get out of hand and satiation occurs, the system will deteriorate. Thus the author believes the economy must be continually changed to be effective. He recommends increasing the quality of performance required to obtain tokens, and introducing occasional expensive items on the menu. His experiments show that behavior was better under low savings than high savings, and also that behavior
can improve when savings are abruptly lowered. The author has stated his hypothesis succinctly, shows results that appear valid to a considerable extent, and makes the excellent suggestion that savings be closely controlled.

**Intermittant Reinforcement**

It is becoming reasonably clear that the factors involved within the token economy are complex and varied. The previous section on economic balance suggested that backup reinforcement must be manipulated very carefully so that the number of tokens received and spent do not create a balance which may be detrimental to continued performance of desirable behavior. Thus, it may become necessary to control the schedule of reinforcement of behavior.

Kazdin and Bootzin (1972) comment on the paucity of research in scheduling of reinforcement and not inconsistent findings in the existing literature. They believe part of the problem in determining schedules of reinforcement is that reinforcement is rarely dispensed in a 1:1 ratio schedule and appropriate and maladaptive behavior is not closely scrutinized and systematically rewarded and punished. They point out that this delay of reinforcement is desirable, for it teaches a concept which resembles the system of rewards outside the institution. They are correct in stating that much more research is needed.
Hunt, Fitzhugh and Fitzhugh (1968) attempted to improve the dressing standards of 12 retarded residents by using reinforcement techniques at the Newcastle State Hospital, New Castle, Indiana. In this experiment points were the generalized reinforcer. The clients were participating in an exit ward program and were a homogenous group in regard to diagnosis of retardation. A baseline of inappropriate behavior was taken. Initially, points were given for going to work and could be exchanged for backup reinforcers in the store. Appropriate on-the-job appearance was selected as a target goal. In three phases tokens were awarded daily for 14 days, twice weekly (intermittant) reinforcement for ten days, and a third phase where patients's dress was inspected surreptitiously for ten days and no reinforcement was given. A graph demonstrates that in phase one performance was approximately 80%, intermittent reinforcement produced a 90% efficiency, and zero reinforcement produced a 60% compliance with appropriate dressing standards.

In conclusion the authors state that three clients maintained good dress standards, four persons temporarily improved, reinforcement was probably effective for two, and results are inconclusive for the remaining three men.

Thus, intermittent reinforcement was seen to be the most effective schedule of reinforcement for these individuals. Problems or confounding variables are not
mentioned by the authors. These may consist of interrater reliability which was not mentioned. Also, the clients were instructed by means of simply posting desired behavior on their ward bulletin board and thus were not thoroughly instructed. A pre- and post-test of what constituted desirable dress standards would have been appropriate. Thus, it may be that intermittent reinforcement is indeed an effective scheduling procedure for retardates in institutions and can produce an increase in desirable behavior in some residents. More studies which replicate these findings are highly desirable.

In conclusion, a number of variables were evaluated in the context of their contribution to the functioning of the token economy with institutionalized retardates. Staff training is considered by numerous authors as a possible serious stumbling block if not scrupulously undertaken and maintained, because behavior change agents are in control of most of the contingencies and data recording. Numerous methods of training staff are given in the literature. Administrative support of staff is effective for a number of reasons including funding for the token program, public support and accountability. Token economy consultants may provide training, monitoring and troubleshooting functions.

Differences in techniques for using backup reinforcers exist among authors. Some recommend innovative, expensive
items and others believe intrinsic reinforcement is desirable. Failure to respond to backup reinforcers is considered an individual client preference which needs to be scrutinized when it occurs. The economic factors of deprivation and satiation appear to play a large part in controlling backup reinforcers.

Social reinforcement has an effect on behavior when paired with token reinforcement and the question arises as to whether it can be removed from the token economy context without damage to the economy. Its role is not clear.

Savings of tokens and its effect on the deprivation or satiation of the retarded person is extremely relevant. Large savings appear to result in a performance decrease.

Intermittant reinforcement was shown in one experiment to improve client performance but with some confounding variables.

Thus, a number of variables are becoming clearly relevant to the total functioning of the token economy. Equally clear is the lack of documentation of this and its specific application to the retarded population.
Summary and Conclusions

The first part of this paper is concerned with the selection of target goals as essential prerequisites to the effective token economy. Two orientations were defined: management/control and therapeutic/educative. In scrutinizing the management/control orientation, three types of behaviors were seen to be frequently targeted for tokens with the institutionalized retarded. These were disruptive behavior, ward care tasks, and self-care. In summarizing the literature from a legal and ethical viewpoint it may be said that controlling disruptive or maladaptive behavior using tokens is a negative, aversive goal. Secondly, often what is designated as "ward care" is not fully described, nor is the intent stated as being therapeutic in nature. Third, self-care is a legitimate goal; however, it is often focused upon to the exclusion of other goals, its intent is not specified, or only staff convenience is cited. In some cases it was seen that goals are selected which infringe upon the individual's right to bed, board, recreation, and medicine. Upon further analysis, it was noted that individual achievements may not primarily benefit the individual and instead appear to favor the staff or institution. Mention of client priority or gain is omitted in several cases.
Thus, when institutions emphasize short term suppressive measures, exclude therapeutic goals, or only specify staff gain we see a short-sightedness or disregard for clients with is "counter-rehabilitative" (Martin, 1975, p. 62).

Lest this picture appear entirely bleak, it was noted that many authors have a different perspective toward goal selection. Two main types of therapeutic/educative target goals appear in the token economy literature for the institutionalized retarded. These consists of verbal and social target goals. It was seen that the teaching of verbal behaviors to the retarded via tokens is not widely employed despite results of a few experiments indicating good results. Thus, institutions are challenged to foster this medium which differentiates human from the sub-human species. Many social behaviors (e.g., conversation, group play) are defined in the literature, indicative of many authors' concern with productive daily living outside the institution. To prevent infringement of client rights it is recommended that discretion be utilized in the methodology for teaching social skills. Program implementation was so zealous in one case, as to cloud the distinction between controlling behavior and actual therapeutic intervention. In the majority of these cases, however, the authors appear to be in compliance with legal and ethical standards.
The second half of this paper is directed at discovering the implementation procedure considered to be most efficacious with the token economy for the retarded population. Upon examination of the existing methodologies a unanimous, standard procedure of implementation is not forthcoming. Rather, the present state of the art for token economies with the institutionalized retarded is somewhat diverse and not heavily or consistently documented. In addition, it was discovered that the issue of method of implementation is very complex, and embarking upon an economy requires considerable study, effort and time. It is not certain that the five areas discussed (e.g., staff training, backup reinforcers, social reinforcers, economic balance and savings, and intermittent reinforcement) encompass all possible variables, or that if all these methods are employed that success of the economy is certain. This examination has produced some statements about the efficacy of some methods. Certain methods are more documented and better supported than others. Authors disagree on the method of staff training or the type of backup reinforcer which is most effective. However, it is hoped that some emerging trends at this point in the research may serve as a guide to those presently implementing programs and to future researchers.
Staff training is generally agreed upon as very important to token economy success. A permanent, motivated, well trained, administratively supported staff is deemed by all the authors as very highly desirable, if not imperative. Institutions have traditionally not had the resources to produce this kind of staff. Thus a problem is created when institutions are called upon to change (and historically this is a gradual process). A lag will exist between the goal of a highly trained staff and the implementation and achievement of that goal. A solid, continuous inservice program to teach staff, which includes practicum, is recommended for token programs for retardates in institutions.

Experimental isolation of backup reinforcers to determine their exact role within the token economy appears insufficient at this point. However, a number of researchers drawing from their own experience have formed some opinions which appear reasonable. Unfortunately there seem to be two different opinions. Some report that innovative, expensive, frequently changed backup reinforcers produce the most change in behavior; others report that intrinsic, natural reinforcers appear to be better. Conclusive evidence is lacking and this is no help to institutions trying to either stock their token store adequately or abolish it altogether. Verified research appears to be sorely needed in
this area. Economic factors appear important in determining the power of the backup reinforcer. Therefore the individual planner is advised to rely on the experience of others which indicate powerful, closely controlled backup reinforcers are producing good results.

The role of social reinforcement is clearly important and it reportedly affects behavior within the tokey system with retarded, withdrawn subjects. Its use must be cautiously implemented and not relied upon exclusively, for sufficient documentation is lacking. One researcher states that it may be the social reinforcement that takes place during presentation of the token which actually changes behavior. Thus, the amount, duration and frequency of social reinforcement is unresolved. However, it appears to be a necessary part of the token economy.

The economic factor is revealed to be extremely relevant within the token system. By experimentally manipulating savings and also post hoc observation, some authors strongly suggest that large savings appear to decrease the performance necessary to earn tokens. While more research is needed to substantiate this claim, it appears to be a very reasonable suggestion to closely monitor and manipulate savings to achieve the greatest performance.
In employing operant principles to behavior, timing of reinforcement is of well known importance. It is not surprising that intermittent reinforcement using tokens produced and maintained the greatest productivity with retardates. What is surprising is the paucity of experimental studies which isolate this factor. The implication is that we may be defeating ourselves and actually wasting time on inefficient scheduling of reinforcement by staff who already are faced with insufficient time to do their job well. Tremendous gains could be made in efficiency and performance of staff and clients if this area was empirically validated.

To recapitulate:

(1) Employ a broad range of therapeutic/educative target goals which meet legal and ethical standards and consider the individual client benefit of paramount importance.

(2) Thoroughly and continuously train, motivate, and support staff efforts to effect the token economy.

(3) The use of powerful backup reinforcers is strongly recommended although the absolute strength is not known. It is evident that they must be closely supervised so that excessive levels of deprivation and satiation do not occur which might affect behavior.

(4) Use of social reinforcement is highly indicated, but amount, duration, frequency is not yet known.
(5) Closely monitor and manipulate savings of the economy; low savings may improve performance.
(6) An intermittent reinforcement schedule using tokens may produce the most desirable change in behavior.
Addendum

A token project was begun by the author in the summer of 1978 at Sunland Center, a large residential institution for the retarded in Orlando, Florida. Approximately one half a ward participated, nineteen males. Their ages ranged from eleven to sixty years and IQ ranged from 26 to 70. Twenty-eight staff participated.

Certain operant conditioning techniques were explained at staff meetings. Individual sessions with the aides who administered the tokens and their clients were scheduled in which individual opinions were solicited as to what behaviors were desirable therapeutically. Cooperation by the staff was moderate throughout the program. Targeted behaviors included disruptive behavior (such as fighting), ward care (clearing tables), self care (bathing self), verbal behaviors (requesting permission to leave the ward), and social behaviors (playing with others cooperatively). These were compiled into a behavior checklist for each client and an individualized token card which was immediately punched and socially reinforced when a behavior on the check list was emitted by the resident.

During the program, social praise and tokens were awarded each week in an individual meeting of client and
supervisor, where a discussion of the past weeks' performance took place. These tokens were exchangeable for articles of clothing, toys, movies, cosmetics, and consumables in the token store at the Center. Data was recorded from the weekly token card onto notebook sheets and placed in a notebook where a three month period of time was easily visible. As clients' behavior improved and a great number of tokens were earned, a larger number of desirable behaviors were also required so that the number of tokens received was not excessive, thus preventing satiation.

No statistical comparison of pre-token and token rewarded behavior was possible because of lack of baseline data. Nevertheless, it became apparent that an increase in the number of desirable behaviors was taking place because clients began to earn increasingly larger numbers of tokens. Thus a steady increase in the criterion was necessary to avoid satiation. It was felt that token reinforcement resulted in great behavior change. Cooperative behavior appeared to increase and less violence was noted in the monthly reports of resident injuries. Clients performed a greater number of social and verbal behaviors than in the past. Staff felt that tokens were largely responsible for the change in behavior.

The obstacles to successful implementation appeared insurmountable at the onset of the program. Staff training was time consuming and seen by some staff as extra work.
The cardboard tokens were easily lost by the clients and it was often difficult to get more cardboard. Data recording was detailed and time consuming. The token store often ran out of reinforcing items and was not restocked for weeks due to lack of funds and administrative concern. Yet even in the face of these obstacles an observable behavior change took place. This change may be entirely attributable to chance because of the confounding variables just mentioned and staff inconsistency. However, it is equally probable that the token procedure was effective. It may also have had some effect in changing the attitude of clients and staff toward behavior modification systems. It appears possible that individual and group behavior on the ward became more adaptive, responsible, and enjoyable.

Recommendations for Sunland Center, Orlando and its existing token economy are the following: a program of training of staff which includes lectures, movies, practicum, rewards, and testing of employees weekly. Indestructible tokens are desirable, individualized so as to deter theft. The token store needs to be fully stocked at all times with desirable consumables. The tokens paid by customers must be accounted for, prices should be tightly controlled, and a system devised where they are returned to the proper ward at regular intervals to prevent loss. Weekly data sheets need to be expanded so as to present a clear interpretation of events at a single glance. Post-
ing results may increase accountability. Close contact and social reinforcement should take place many times per day between the client and his caretakers in the form of feedback, on the client's progress in the token system. This could take place on an intermittent schedule. The administration could aid the token economy with its interest, support of staff (who could provide monthly reports) through visiting the wards and discussing progress of the system, staff, and residents.
Bibliography


Bath, K. & Smith, S. An effective token economy program for mentally retarded adults. Mental Retardation, 1974, 12, 41-44.


Kaprowy, E. Primary reinforcement, a token system, and attention criteria and feedback procedures with profound retardates in a verbal training classroom (Doctoral dissertation, University of Manitoba, 1975). *Dissertation Abstracts International*, 1975, 36, 2498 B.


