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AN APPLICATION OF DURKHEIMIAN INTEGRATION THEORY
TO GAMBLING PATTERNS IN AMERICA AND SWEDEN

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By

Jonathan Udell, B.A., M.A.

* * * * *

The Ohio State University
1974

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PART I INTRODUCTION

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INTRODUCTION

Overview

An abiding responsibility and challenge to modern sociologists is the testing and verification of prior researches within the discipline. Too often this task is left to others by career-minded workers who would confine efforts to the glamor activities of science—namely development of their own theoretical structures which new generations of sociologists would hopefully verify through empirical test or replication. Thus the all-important scientific process of cumulation of knowledge has been left to the less talented. What Brody (1969a:113) has said of international politics applies also to sociology:

... science is a community effort to the extent that ... observation ... and similar activities are shared. In the absence of genius such a community effort is required to bring order to a complex empirical domain like international politics.

1Sadly enough, the need to make a choice between devising theories and testing has been forced on students by a traditional school of thought which has overlooked the alternative of creating theory from data, i.e., working with both simultaneously. The latter would promote research while acknowledging the theory-biased reward system which prevails in current sociology. For evidence on this latter point, see Glaser and Strauss (1967a:17).
The need for validation of theory in sociology, while important for all types of theory, is particularly compelling with respect to the work of the classical theorists because of the influential nature of their work. Thus, major concepts in the field such as alienation, anomie, power, community, and the theories around which these are built are secure in their theoretical importance. It is concepts such as these whose empirical test would seem to offer the greatest pay-off. One such concept and one such theory is Durkheim's integration and theory of suicide.2

The purpose of this study is to test the concept of integration from Durkheim's *Suicide* (1966a) with empirical data different in substance as well as time and place from those tested in the original work. The study will hopefully serve as a replication but primarily as a test for potential expansion of the concept's applicability to a new empirical domain. Specifically, the study will examine gambling behavior of citizens of two contemporary societies, the United States and Sweden.

Two facets of gambling activity of a representative cross-section of American plus a random cross-section of Swedish men will serve as the empirical basis of the study.

---

2Of course, integration is not new to Durkheim when seen in close relation to the more general concept of societal cohesion. Durkheim was among the first, however, to consider societal cohesion as consonant with integration of the individual into the society.
These facets are the incidence of gambling activity, or how many Americans and Swedes of given social categories wagered money; and second, volume of gambling activity, how much money as a proportion of total income the sample members spent on gambling. Basically three types of activities are defined as gambling for the present study: commercialized gambling such as horse racing or soccer pools; leisure time activities which involve wagering, such as card games; and impromptu gambling vehicles chosen from what are primarily random social activities, such as politics or sporting events, but can be almost anything. The American data will be based on segments of a Gallup poll completed on an omnibus basis in January, 1971. These data and the Swedish data will be subjected to secondary analysis, namely statistical analysis and interpretation and tested in light of hypotheses developed from the theoretical framework of Durkheim's *Suicide*.

Hopefully the data will suggest alternative hypotheses and theoretical reformulation. Obviously, however, Durkheim's perspective as a whole will neither stand nor fall on the outcome of this research, which deals with only one relevant empirical area in terms of theoretical test.

**Review of Literature**

Because the study undertaken here intends to serve the simultaneous purpose of testing aspects of a classic
theoretical work with current data and providing theoretical understanding to the area of gambling behavior, the relevant literature includes prior work elaborating Durkheim's theory of suicide by empirical test and sociological studies of gambling behavior as well.

Turning to the former aspect, a flurry of sociological studies have been made in recent years. Among the more notable are those by Gibbs and Martin (1966a), Gibbs and Martin (1964a) and Chambliss and Steele (1966a). Prior to outlining the conclusions of these, however, a brief statement regarding Durkheim's Suicide and the concept of integration will be made for background purposes.

Integration refers in this work to the given degree of cohesion found in a society which arises from the particular strength of social relations in that society (1966b:209). In terms of individual behavior, an individual is integrated to the extent to which the society provides him with social attachments to others which prevent social isolation. The pathology of a lack of meaningful social attachments for an individual is patent when the logical consequence, suicide, occurs, but Durkheim is careful to link the health of society to that of its individual members. He states in Suicide (1966c:369): "... the mood of peoples, like that of

---

3See work by Henry and Short (1954a) and Pierce (1967a) for discussions on empirical test of the anomie aspect of Durkheim's suicide study.
individuals, reflects the state of the most fundamental part of the organism (society)."

Also, it will be added here briefly that Durkheim conceived of integration as a continuum, of which the pathological extremes are egoism, i.e., detachment from others and self-absorption, and altruism, or disregard of the value of one's own ego and its survival when compared with the perceived value of the social group and its survival or maintenance (see Durkheim, 1966d:221).\(^4\) Finally it must be mentioned that Durkheim tested his integration concepts with contemporary cross-societal ecological data, namely rates of suicide for various European countries in the period of the mid-nineteenth century.\(^5\)

As stated previously, current researchers have expended considerable energy in application of the integration concept to current data, and in so doing either contribute to the validation or modification of Durkheim's original findings. Gibbs and Martin (1966b) in their augmentation of Durkheim's data with those from non European countries and

\(^4\) The rearrangement of his concepts to fit the tenor of Durkheim's scheme, i.e., the elimination of suicide types not involving isolation has been suggested by some writers. See for example Johnson (1965a).

\(^5\) While Durkheim worked with ecological data other than suicide rates to discern patterns of social behavior, suicide rates alone displayed the requisite consistency and variation to correspond satisfactorily to the social causes which Durkheim suspected were in operation.
for periods from the twentieth century, found for example that in the Netherlands at the turn of this century, Jewish rates were much higher than Protestant rates of suicide. Yet it was the latter group that according to Durkheim's data had the highest rates. Likewise, Gibbs found that in the depression era in Toronto, Canada, Catholic rates were higher than those of Protestants. In fact, Gibbs concluded that the only generalization holding uniformly for every time, place and society is that young children have extremely low rates of suicide (Lowry and Rankin, 1969a: 26-27). His work implies that the validity of particular variables as indices of social integration is subject to vagaries of time, place and cultural and historical setting. Gibbs and Martin apparently also feel Durkheim "did not really test his data in terms of a set of rigorous criteria of social integration" (1966c:315).

Durkheim's conclusions may be criticized for lack of scientific precision with regard to certain variables acting as indices of social integration. For example, in seeking to determine the existence of differences in rates between major religious groupings which would substantiate his theory of integration, Durkheim operationalized religious grouping by geographical areas, calling whole nations

6 For a good philosophy of science discussion of the unique generalization difficulties of social science, see Nagel, The Structure of Science (1961a).
Catholic or Protestant (1966e:152). This ecological fallacy will not be repeated in the present study, as religious membership will be considered independently of ecological factors.

Other recent literature has attempted to test the relationship between integration and suicide by expanding upon the set of independent variables which Durkheim used as measures of integration. Gibbs and Martin (1958a, 1964b) have posited an inverse relationship between status "integration," which is basically status consistency, and rates of social suicide. The reanalysis of the data used by Gibbs and Martin to reach their conclusion has resulted in criticism of the status integration theory. Chambliss and Steele (1966b:531) question the logicality of the theoretical structure of the theory, the utility of the operational definition of status integration, and claim that additional data from Seattle, Washington plus a more thorough analysis of the Gibbs-Martin data tend to disconfirm rather than support the Gibbs-Martin theory. Similarly, Hagedorn and Labovitz (1966a:84) have pointed out the danger in assigning status integration or lack of same by mere occupancy of a status configuration, the operational definition employed by Gibbs and Martin.

Theodorson defines status consistency as "similarity of social and cultural expectations directed toward the various statuses occupied by an individual" (1969a:417).
While the work reported above expands the Durkheimian model in terms of independent variables or extends the range of data applied to the model as a whole, there had been until recently little evidence of experimentation with different dependent variables plugged into the cohesion model. Such work, of course, would parallel the efforts of this monograph. However, Gove (1973a) has recently published a study which tends to confirm the importance of the integrative function of the marital role in the establishment of relatively lower general mortality rates of whites in the United States during 1959-1961, when these are compared to non-married individuals. Further, Durkheim's predictions with the cohesion model are further extended by Gove's finding that men are more sensitive to being unmarried in terms of general mortality than women. Finally, Gove reports further new support for Durkheim's marital indicator in data published with respect to psychological well-being (Gurin, Veroff and Feld, 1960; Bradburn and Caplovitz, 1965; Bradburn, 1969) and with respect to mental illness (Gove, 1972a).

A second very recent study makes advances in the extension of the Durkheimian model both in use of independent and dependent variables. Like Gove, Phillips and Feldman (1973a) work with mortality rates as a dependent variable, thus adding new strength to this avenue of extension of criterion variables used to test the integration model.
Phillips and Feldman make use of three independent variables which index the societal mechanism of ceremony, which according to Durkheim serves to reaffirm the unity of the group (1973b:678), as well as attract individuals to participate in them to the degree that the potential participants feel integrated into the society.

The three variables consist of two unused, at least by Durkheim and others mentioned here who were working on extending or verifying Durkheim's work. These are birthdays (as days of ceremony) and significant religious ceremonies, in particular the Jewish holiday of Yom Kippur. A third is a variable used by Durkheim in *Suicide* (1966f:204), namely political elections. This measure of egoism is extended by Phillips and Feldman to the examination of 20th century United States presidential elections (1973c:685).

The results tend to confirm, as did Gove's study earlier, the significance of Durkheimian integration for explaining changes in mortality rates (1973d:692).

These findings serve as a precedent for the attempted extension of the scope of the cohesion model, and seemingly would indicate that the Durkheimian model can be meaningfully extended to a wider range of social behavior than heretofore attempted.

**Substantive Gambling Studies**

The present study derives not only from a need to improve the empirical base of Durkheim's integration thesis,
but to expand on an exceedingly scant social science literature on the topic of gambling, as Tec points out (1964a:2-3). Perhaps what is primarily needed is new substantive theory, that is, theory grounded in empirical data. Just how little macro theory with macro-oriented data such as sample survey data has been done in sociology will be discussed presently. A review of the general social science literature beforehand demonstrates the lack of sociological attention to the topic.

Typically, the literature frames considerations of the question why people gamble in psychological terms. Roughly eight types of psychological explanations are offered. First is the psychoanalytic explanation. According to this self-admittedly speculative view, gambling is a form of self-punishment in which the gambler unconsciously wishes to lose to alleviate guilt over death wishes toward his father (Tec, 1964b:55). What this view fails to deal with is the rationale for gambling as the selected form of self-punishment. Aside from Freud, Bergler, Lindner and Reik have postulated this point of view (Newman, 1972a:9). A subtype of this overall position is the view that people cannot help themselves when it comes to gambling, i.e., that gambling is a compulsive activity. The psychopathic need may be a response to family, job or sexual frustrations (Cole and Margolius, 1964a:14-15). Wagner adds (1972a:27) that big gambling seems to exist disproportionately among non-sexually
stimulated individuals. He further states that motives for gambling are complex and deep-rooted, and that compulsive and non-compulsive gamblers alike don't understand what makes them gamble (1972b:60-61). The extent of compulsive gambling varies by country.

In England, compulsive gambling is confined to a "small and insignificant minority" (Newman, 1972b:226) while in the United States, estimates ranged from four to six million in 1964 according to Cole and Margolius (1964b:15) to a cautious estimate of seven million in 1972 according to Wagner (1972c:21).

Secondly there is a "that's human nature" view of the need to gamble. This view (Rouge et Noir, 1898a:2) states that man develops a need to participate in games of chance as a reflection of his perception of his social environment as uncertain. This position would be quite similar to one put forth in work by Zola and Newman which will be discussed presently, except that Rouge et Noir (a nom de plume) considers the motivation psychological rather than a function of social class. His view is that gambling is a trait found in all men.

A third explanation for why people gamble is simply that gambling is a mercenary, acquisitive, materialistic enterprise. Comstock, a reformer-type who wanted to abolish gambling, says that "the glitter of fortune is the bait to all gambling schemes" (1967a:57).
A fourth explanation, slightly less common, is Callois' view of the function of gambling as that of a play activity (Newman, 1972c:13). Play activity is defined as "isolation from real life," with "uncertainty of outcome" and as "a non-productive voluntary activity from which the participant is at all times free to withdraw" (Newman, 1972d:14). Specifically, gambling is that subtype of play activity which consists of games of chance ("alea"). Alea represents passivity, a negation of work and disciplined labor. It also "acts to reveal man's destiny," (Newman, 1972e:14) and Callois adds, much in the vein of Simmel, serves in modern social systems the function of providing a substitute world in which natural and individual differences are abolished. Social and economic equality denied in real life are artificially constructed (Newman, 1972f:14). This view, in its resemblance to Simmel, borders on sociological social psychology. It most definitely becomes sociological by continuing, "Alea assumes an especially significant role in societies in which there exists a sharp break between working time and leisure time, where perfect predictability and boredom prevail in the occupational sphere" (Newman, 1972g:14). As shall be seen, this latter elaboration also

---

converges with the sociological, rather Marxian, view of Bloch and Clinard.

A fifth psychological explanation of why people gamble is its satisfaction of unappeased drives toward decision-making and autonomy (Herman in Newman, 1972h:17). This is based on the similarity of cultural objects found in gambling and conventional entrepreneurial roles—"systematic study of form, sustained attention to fluctuation of market conditions, estimation of probabilities and ultimately the backing of personal judgment with real cash" (Newman, 1972i:17)

A sixth psychological explanation of why people gamble, which seems overly rational and cognitive, is that gambling is undertaken as a heuristic device for learning management of complex sets of variables; Newman (1972j:157) adds the almost overly abstract reason that gambling enhances "system building as a regular habit available for transference into other life situations." One would suspect that this comprises one of the lesser explanations in terms of incidence.

A seventh psychological, or more precisely psychological social-psychological explanation of why people gamble is offered by Newman (1972k:122,157). He notes that gambling offers the possibility, through offering a large range of standardized, institutionally sanctioned roles to the gambler, of personality expansion. Among the roles which are particular to gambling situations are those of "Sage,
Jester, Philosopher and Barrackroom Lawyer." Aside from this, the gambler can fulfill fantasy inasmuch as many of the roles he assumes while gambling are foreign to his everyday, non-gambling existence. In such a capacity, gambling may be said to lead "to personal development, individual comprehension and self-integration."

Finally, Scimicca has developed a typology of gambler types which is easily adapted to gambling motivation. Among the types he considers which have not thus far been considered are the professional gambler, the percentage gambler, the cheater and the thrill gambler (1971a:56-72). These types and the others in his list vary according to five variables: motivation, degree of ego involvement, amount of skill possessed, degree of superstition involved and in their societal relations. At least three of these variables are psychologically based (the first three). The five unfortunately do not seem independent of one another, as for example, degree of ego involvement and motivation for gambling can be linked in a particular case.

Other social science work on gambling is evidenced in the realm of anthropology. Callois and Huizinga see gambling as a "modern survival of primitive animist society within which appeals to, and propitiation of, supernatural spirits exerted a powerful sway," and add that contemporary gambling is characterized by belief in the power to command one's destiny through divination of intentions of

Along this line, Greenson notes "a characteristic of all gambling situations is the prevalence of superstitions and magic rituals," including such often observed phenomena as changing of seats (card games), walking around chairs and looking at cards in a prescribed order (Wagner, 1972d:57). Newman notes any number of flaws and limitations with Callois' et al. theoretical perspective. First, as in the psychoanalytic approach, no explanation as to the choice of gambling as opposed to some other activity as a form of sublimation (in the earlier case, self-punishment) is given. Also, why a socially neutral type of sublimation, say hiking, is not chosen is not explained. Does the legal status of the activity affect its attractiveness for different individuals? Do certain activities sublimate more effectively than others? Aside from not answering these questions, the theory may be logically untenable: Newman points out that if gambling is modern man's sublimation of magic and ritual, how can one reconcile empirical evidence that primitive man gambled? (1972m:14) This latter information tends to dissociate gambling from magic and ritual, or at least render them independent.

Finally, a study by McCall (1964a) offers the interesting possibility that certain forms of gambling act in mutually supportive or symbiotic fashion with magic and
religion when occurring within particular subcultures of the gambling population. The thesis, a highly plausible one, is that numbers invokes elements of Christianity and fetishism among its participants due to its highly noncontrollable nature. Another factor implied in the article is that the lower class, predominantly black, numbers player structures the situation toward the utilization of ritual and superstitious practice.

Within sociology two major approaches toward gambling may be discerned. These are the microscopic, single social class or criminological study, and the macroscopic efforts directed toward entire societies and generally conducted by sample survey. While the latter is the most relevant as a genre for the present study, the former approach will be briefly characterized.

With regard to single class studies, the obvious flaw is their exclusion from consideration of one or more classes. Such a study is Herman's (1967a) observational study of gambling behavior at various American racetracks. The author notes that for lower (and many middle) class men, gambling contains essential elements of esteemed entrepreneurial roles absent in real-life occupational, familial and recreational roles (see also page fourteen of this study). This study does not deal with the upper class.

The uncertainty of lower class life is a theme expressed in the works of Newman (1972n:22) and Zola (1963a).
The major thesis in these is that gambling provides the illusion of control over the environment, a function of no small significance in the lives of lower class men.

Other microscopic studies of the lower class have focused on a "primary group" hypothesis which deals with social norms and group interaction. An example is found in Zola's study (1963b:30) where the betting shop is seen as providing a "common and self-contained refuge from the hostile and indifferent outside world." Within this orientation one also finds a boredom hypothesis, which leans in a heavily Marxian direction. Bloch and Clinard, in a view similar to that earlier expressed (see page thirteen) by the anthropologist Callois, propose that the routine and boredom of modern industrial life leads to gambling (Newman, 1972a: 15). One can definitely see elements of alienation within this definition.

The criminology oriented microscopic studies include Bloch's (1964a) effort which underlines the ambivalent attitude toward gambling in the United States. The issue at hand is where to draw the line between governmentally sanctioned forms of gambling and illegal forms of same. The author claims that despite our recognition of the danger of underworld control of gambling, we overlook "deep-rooted, built-in compulsions which encourage Americans to gamble and create a profitable market for the racketeer."

A second such study is Kaplan and Maher's (1970) piece
on the numbers game, which the authors claim surpasses all other gambling activities in revenue. The authors discuss subsidization of underworld activities through numbers profits, including smuggling, narcotics and extortion. These unregulated profits of course by-pass tax regulation as well. Kaplan and Maher recommend government entry into the numbers game with inducement of better odds to drive away business from the syndicate and reduce its profits. Tax revenue could be used to uplift slum areas. This type of financial redistribution for community improvement is already used in some countries (see Geis, 1973a).

Most recently, Geis (1973b) wrote a provocative comparative study of gambling, which centers prominently on the issue of legalization of various forms of gambling. Geis notes the puzzlement of lower class individuals who find numbers a sub rosa activity within the ghetto and find their state sponsoring lotteries. Geis' article is useful in adding to our knowledge of the historical biography of the lottery, which has enjoyed a mixed career but is now gaining public support in some states. The article discusses the current status of off-track horsebetting in New York and California and generally looks favorably upon decriminalization of gambling.

In summary, the criminology oriented studies generally view gambling as a deviant form of social behavior. While this frame of reference is undeniably valuable in dealing
with legal, financial and policy issues, it is the contention of the present study that the integration view may be more useful in learning about the workings of societies as wholes.

As stated earlier, little sociological macrotheory has been undertaken on the issue of gambling. Three studies are important within this sparsely treated category. The first of these is Tec's Swedish study (1964b). Tec's study is based on a national random sample survey of 3000 Swedes conducted in 1954. The major finding of the study is that propensity to gamble is highest in the upper-lower class of Swedish society. The major thesis is that this finding can be explained by status-frustration, which posits manifestation of such frustration by a social mobility drive (1964c: 66-67). This position is criticized by Newman, who offers a counter theory of greater material resources with which to comply with subcultural gambling norms (1972p:17). A further theoretical issue is the theory's limitation to the lower class, as it considers patterns in classes other than this one only in terms of absence of the status-frustration singular to the upper-lower class.

The second study is Devereaux's study of the United States (1950a). In this unpublished dissertation, the author notes a greater propensity to gamble among lower class than among middle class Americans. He attributes this to the greater internalization of the Protestant Ethic with attendant religious beliefs concerning capitalistic means of
financial acquisition among middle class individuals (1950b:806-807). Aside from the problem of equating Protestantism with the middle class and non-Protestantism with the lower class, this position is weakened in light of the many upper class Americans who exhibit internalization of the Protestant Ethic according to C. Wright Mills (1953a:xv). This group probably gambles more heavily than the middle class (Veblen, 1967a:276-277).\(^9\) The vulnerability of Devereaux's theory to such criticism is due to its obliviousness to upper class gambling patterns, despite his descriptive treatment of this matter (1950c:858).

On the other hand, support for the Devereaux position issues from some quarters. Newman (1972q:12) notes that gambling "is a form of activity almost exclusively confined to the aristocracy on the one hand and the working classes on the other." He suggests that Devereaux's thesis is responsible. However, moral condemnation per se does not seem the *sine qua non* with respect to distinguishing upper and middle class attitudes towards gambling. One may observe that the upper class, with no shortage of the kind of morality born of the Protestant Ethic, does not exhibit the

\(^9\)Current data on which this last assertion is made is restricted to the upper-middle class, the upper limit of my data sample; consideration of all Protestant denominations as alike with respect to the Ethic is based on Lenski's findings in *The Religious Factor* (1958a), though even this assumption is likely to be suspect (see Glock and Stark, 1966a).
gambling inactivity of the middle class. If this is the case, the Protestant Ethic position is again on shaky ground.

The third study is the Report of the Royal Commission (1951a), which deserves inclusion among the top three macroscopic studies in sociology as a major societal survey with a quantitative focus and a representative sample of gamblers and gambling patterns in England. However, this report is not, strictly speaking, sociological but is a government-sponsored panel paper. As such it is atheoretical; its major impact is mainly in the policy realm. The most glaring flaw in comparison with the other studies of this category, and in most senses such a comparison is unfair, is the lack of attention to independent variables around which one can order gambling. The general thrust is toward categorization of outlays of money for various types of gambling for Britain as a whole. It can be seen how such an emphasis can not readily aid in a direct way the development of substantive sociological theory.

Unique Features of the Present Study

At least five features seem to make the present study unique. First, unlike the previously discussed work, including the single class microscopic approaches and the Tec and Devereaux macroscopic studies, the present study intends to shed light on gambling patterns for all segments of the
societies to be considered.  This is so primarily because societal integration is a quantitative phenomenon encompassing all societal strata ordered by variables such as social class. Conversely, Tec's study, for example, has little theory for upper and middle class patterns, as these segments are excluded from the status-frustration preconditions. Similarly, Devereaux's use of the Protestant Ethic to explain class variation in gambling involves a monolithic characterization of two classes, the middle and lower.

Secondly, the present study takes a novel approach toward the study of gambling behavior. This is the view that not only will theory aid us in understanding more about gambling behavior, but that gambling data are social facts produced by social causes and that these causes may lie at the core of the structure of a particular society. In this vein, the data will be considered vehicles by which a classic societal theory may be further explored, namely Durkheim's cohesion theory expounded in Suicide (1966g). In essence, the view here is that along with the knowledge that

10 Despite the possible lack of inclusion of a true upper class in the American data, the theory is abstract enough to apply to all classes, is not aimed at particular classes, and is supported by extrapolation of trends appearing in the total range of data which are available.

11 See the relevant discussions on social facts and their causes in Durkheim's The Rules of Sociological Method (1964a: Ch. 1, 110).
this monograph may add about gambling there is a concomitant lesson to be learned from gambling patterns about society.

Third, a major distinction between the theoretical approaches in the Tec and Devereaux studies and the proposed one is that the perspective of the Durkheimian approach focuses on gambling as problematic when viewed as an index of a problematic state of society, i.e., maintenance of some degree of cohesion. The Tec and Devereaux studies make gambling an inevitable, common-sense response given status-frustration or the absence of a sacred, turned secular, ethic. Not only do these studies fail to consider gambling as problematic under these conditions, but the conditions themselves are atypical and thus relegate gambling to the status of societally deviant behavior. A minority of individuals are presumed to be subject to status-frustration and a minority of individuals are other than middle class, hence supposedly without the middle-class ethic. The Durkheimian view, on the other hand, notes that once one can establish the existence of cohesion in a certain society, some degree of gambling activity should be considered normal for individuals within that society. The relation between a moderate tendency to gamble and a healthy, i.e., relatively cohesive society, will be discussed presently.

Turning to methodological aspects, the present study is bi-societal whereas the other macroscopic studies (Tec,
Devereaux, Royal Report) are all single-society studies.  

To the extent allowed by the data, the same causal phenomena will be examined in America and Sweden, thus approaching the true comparative study. However, no inference of congruent social milieu of the two societies at the time-periods examined is drawn, and thus no firm imputation of comparability is presumed.

Finally, this study is unique among the macroscopic and microscopic studies mentioned, with the single exception of the Swedish study of Tec, of having as its primary thrust a sample survey approach. Further, it is the only study in which the random sample was chosen without regard to age and sex characteristics. 

This particular facet seems an undeniable advantage in drawing conclusions about gambling in the United States in particular. Testimony to this latter point may be drawn from Devereaux himself, of whose study Tec states: "... one of the differences between Devereaux's treatment of his subject and that of other writers is that he also discusses the gambling behavior of

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12 Care must be taken not to misrepresent this work as comparative in the technical sense. A multi-societal study is not necessarily comparative, and definitely is not if 1) cause and effect relationships are not sought after or if 2) the societies are not socially, politically and economically comparable; chronological simultaneity does not guarantee the latter (Holt and Turner, 1970a:6,193, and Durkheim, 1964b:139).

13 A weakness of the Tec study (see 1964d:6).
the American middle class\textsuperscript{14} (Tec, 1964e:43). Devereaux notes (1950d:18-19) an almost complete absence of quantitative materials for statistical analysis of our problems ... nor can we get accurate evidence on the relative incidence of gambling among different social classes or categories of persons.

**Theoretical Background**

As touched upon earlier, Durkheim postulated a relative degree of societal cohesion, i.e., a fairly closely knit society, as a precondition for both societal and individual well-being (see page five). The two major facets of this relative cohesion are the aforementioned integration and regulation (Smelser, 1971a:15, and Pierce, 1967b:157fn.). The integration aspect has been discussed previously, while the regulation aspect deals primarily with societal control over behavior of its members through norms (Smelser, 1971b:14-15).

With regard to integration and its previously discussed (see page six) continuum of egoism and altruism, Durkheim considers the latter concept largely irrelevant for members of modern societies (Durkheim, 1966h:223), so that egoism becomes the meaningful aspect of integration for this study.

With respect to the regulation aspect, the two poles

\textsuperscript{14}The implied but unstated reference is to the lower class.
are anomie and fatalism. Anomie is often equated with or defined as normlessness or isolation (see for example Pierce, 1967c:458fn., and Merton, 1968a:216). While often considered the most useful concept in *Suicide* in terms of application to current situations, it is not employed here because of considerations of fit to the data.

Anomie, insofar as it concerns variance of one's "actuality" with one's expectations, whether this be brought about by a too slowly or a too quickly changing social structure, or by a society without standards of achievement, is typified by its lack of regard for social class position. It embodies the lack of appropriate standards for the entire society or the relative lack of internalized standards in a highly socially or physically mobile individual. It occurs irrespective of direction of mobility, both social and geographical, and at any social stratum. As such it was not felt appropriate for the research here, which draws on data limited to such variables as social class and gross income, rather than on type of overall economy or mobility patterns.  

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15 In terms of normlessness, Pierce notes a striking similarity between Durkheim's anomie and Thomas and Znaniecki's concept of social disorganization.

16 For the same reason, fatalism, the concept at the opposite end of the regulation continuum, will not be employed in this study.
Research Design

The general design of the proposed research is a dual cross-sectional sample survey (See Hovland, 1959a:8) involving two societies, the United States and Sweden. In experimental design terms, the research is ex-post-facto in that the independent variables had occurred prior to the study. The research began with measurement of the dependent variables. In other words, it must be emphasized that no direct control over independent variables occurs in this study. Although the samples were collected randomly, assignment to groups was not randomized but based on possession of given dependent variables. This assignment effectively occurred during the data analysis in the case of the U.S. data and was already accomplished in the completed contingency tables used by Tec to present the Swedish data.

As stated earlier in this chapter (page four), the modus operandi for the research on both data sets will be secondary analysis. In the case of the U.S. data, this involves utilization of quantitatively recoded information based on data from a monthly omnibus sample survey originally conducted by the Gallup organization in January, 1971. In the case of the Swedish data, the secondary analysis was actually tertiary analysis, or reanalysis of data presented in its finished context in the form of contingency tables in Tec's previously mentioned study. Tec herself conducted a
secondary analysis of data collected by the Swedish Institute of Public Opinion in a sample survey covering all manner of social activities in the year 1954. Tec recoded these data, eliminating non relevant questions, i.e., questions not on gambling behavior.

Aside from the quality of the data, the basic differences between the two data sets pertain to the range of variables used and occasionally to the characteristics of these variables. What follows is a discussion of each data set, with indication of important differences, for various aspects of the design.

First as regards the samples selected. The sample for the United States consisted of 1600 individuals, a figure ultimately reduced to 1596 during the analysis stage of the research due to simple attrition. It is not believed that the loss of these four cases could unduly influence the outcome of the study. These individuals were selected "to produce an approximation of the adult civilian population . . . living in the U.S. . . ." (Li. et. al., 1973a:2). The Swedish sample used by Tec consisted of 812 males ranging in age from 18 to 55. This sample was actually part of a larger multi-stage probability sample of 3000 encompassing all age and sex categories. The Tec sample devolves from one of six parts of the national sample, each part a random

17 Except for those persons in institutions.
sample and constituted of a different age and sex group. Only one group, adult men born between 1900 and 1937 was questioned on soccer betting, thus the limitation to the age and sex categories mentioned (Tec, 1964e:6).

As for methods of initial data collection, the U.S. data were gained from personal interviews conducted by trained Gallup staff members with pretested survey schedules. The Swedish data were gained from an interview survey with six separate questionnaires covering each part of the total sample, with much overlap of questions. The total range of questions dealt with economic, political, familial, religious and recreational activity (Tec, 1964f:6).

Third is the nature of the evidence used to test the hypotheses. The specific questions asked of the respondents as these relate to the hypotheses of the study will be enumerated in the appendix. At this point, it only seems necessary to underscore the fact that the data are of a demographic, factual nature in which respondents give information on background characteristics such as their occupation and yearly income and their actions with regard to gambling. For the American data the time frame for gambling activity is the four weeks immediately prior to the questionnaire, while for the Swedish data no clear parameter seems to exist. Time periods considered vary by questions and often extend indefinitely into the respondent's past (see for example Tec, 1964g:13). While gambling is assessed with regard to
activity rather than beliefs or feelings, this does not imply lesser information about underlying dispositions toward gambling.\footnote{Cooke and Selltiz, who equate attitude with underlying disposition, note that inferences about attitudes can be made equally from beliefs, feelings or behavior toward an attitudinal object (1970a:23,26,27).}

The fourth aspect involves the operational definitions. With respect to gambling behavior, the two operational definitions for both data sets involve propensity to gamble and gambling volume.\footnote{It should be stressed that these facets are independent of one another, so that verification of one or the other of the two would not automatically insure verification of the other. The two represent different spheres of the gambling world.} For the U.S. and Swedish data, these definitions will flow from the defining characteristic of egoism: Smelser (1971c:15) states, quoting Durkheim, "the typical individual expression of the social state of egoism . . . is a 'loathness to act' . . ." This will be operationalized in the present study by a lessened propensity to gamble and by a smaller proportion of gross income spent on gambling. For the U.S. data, the particular index used to depict a lessened propensity will be no gambling activities of any kind over the four week period immediately preceding the questionnaire. For the Swedish data, lessened propensity will be depicted by gambling on a less than monthly basis as so classified by Tec (1964h:6fM.). Conversely, non-egoism here will be operationalized as any gambling activity
listed for the period in question for the U.S. data and gambling at least once a month for the Swedish data.

As for the volume facet, the American respondent will be designated as either a light (low) or heavy (high volume) gambler by falling on the smaller or greater side of .003\(^2\) of his total yearly income spent on gambling. It should be underscored that the lower group includes those who do not gamble at all. The Swede will be so designated by falling on the smaller or greater side of .01 of total yearly income spent on soccer pools, a figure derived from data yielding a mean yearly income of 10,000 kronor and a mean yearly sum of wagers of 104 kronor. As a general statement, gambling activity will be used as evidence of integration within the society, by virtue of the social activity which it documents.

With respect to the independent variables, the basic difference in the two data sets is in the degree of successful approximation to the indicators used by Durkheim to measure integration. The American data is superior, containing indices for two out of the three areas, familial, religious and political, (see Smelser, 1971d:14) that

\(^{20}\text{The four week period for the U.S. data here will be standardized to a yearly figure and compared against the mean yearly estimate of roughly$30 expenditure on gambling for an adult American as evidenced by preliminary examination of the data. Mean proportion of yearly income spent on gambling activities is derived from a mean base income of$8788, as suggested by the data.}\)
Durkheim used to measure this concept. The American data also supplies three other indices, which while not considered in the above three areas, are used here as barometers of integration: occupation (social class), income, and age. With respect to the latter, Durkheim notes that suicide rates attain significance at the ages in which the force of collective life begins to impinge upon the individual, bringing fluctuations and hazards along with it (1966i:102). The Swedish data covers only the religious area, and this is done without reference to the major types of religions elaborated by Durkheim, the distinctions between which are crucial in terms of integration of the individual according to his theory. The Swedish data, however, is on a par with the American data with respect to occupation and income variables, and adds provocative variables not available in the U.S. data, namely interest in friends and membership in voluntary associations.

Specifically, the independent variable indicators used for each data set are as follows, and in the respective categories of 1) indicators used by Durkheim to test integration, 2) indicators used by Durkheim for measuring anomie or altruism but used in this study to test integration and 3) indicators not used by Durkheim but available in the current data sets and deemed useful to test

\[21\] The reminder that egoism is the only relevant measure of integration in this study is in order here.
integration. For the American data, category one includes: religious preference, marital status, family size, sex and educational level. Category two would for the American data include the indicator age, occupation of head of household and occupation of respondent, which were used in Suicide to measure anomie (the first) and altruism (the latter two) respectively. Category three would consist of gross income per year.

For the Swedish data, category one would consist of the indicator educational level. Category two consists of the indicator occupational class (occupation translated into social class). Category three consists of the indicators expressed interest in friends, yearly income, membership in voluntary associations, and religious attendance.

To summarize, the indicators will be used to operationalize the degree of societal integration of the individual. The indicators are expected to relate to gambling behavior in a manner consistent with the same indicators' relation to the social suicide rate in Durkheim's data or, in the case of the new indicators in a manner which would be consistent with the predictions of Durkheim's theory. In regard to specific predictions which are not straightforwardly adaptable from Durkheim's own hypotheses (i.e., his category one indices), these will be elaborated on in the findings section.
The final aspect of the research design is the data analysis. The data were of three grades, ranging from nominal data for such variables as religious preference, to interval data for such variables as age. Examples of ordinal data would be occupational class and expressed interest in friends (more interest or less interest), and of interval data, the variables age and yearly income. For one type of analysis conducted, ordinal or nominal variables such as gambling propensity (with categories gamble and do not gamble) were recast from qualitative to interval level data. This was done through what is known as the use of dummy variables (see Galtung, 1967a:521). Otherwise, the data was not reconverted.

Three types of data analyses were performed: chi square tests of independence for k independent samples (Siegel, 1956a:175) were used as tests of significance, i.e., to establish the existence of a statistically significant relationship; gammas (or their equivalent for 2 X 2 tables when such tables were present, the Yule's Q test) were used as measures of association to measure strength of relationship when a significant statistical relationship was found; and finally, a second and more sophisticated measure of strength of relationship, one to test interval data, was also employed. This was the multivariate technique of dummy variable regression. This technique yielded Beta coefficients, which are standardized measures of the strength of
relationships between variables. The choice of the particular test of the three was based upon the relationship of interest and its structure in hypothesis format. As a general rule comparison-oriented hypotheses of the form X will do Y more than Z will do Y, where X and Z are at the nominal level of measure, were tested by the Chi-square test, and followed up by gammas where significance was demonstrated. Conversely, hypotheses noting concomitant variation, e.g., as X increases, Y increases, where variables X and Y are interval-level in nature, called for a multiple regression analysis. Further testing of anomalous Betas was done, however, with the use of the Hyman-Lazarsfeld elaboration technique used in testing the comparison hypotheses, i.e., with the use of chi-squares, controlled variables and gammas (or Yule's Q's). In these cases, gammas were automatically performed given the strength of relationship orientation of the Beta hypotheses. Finally it should be mentioned that Betas were not computed for the Swedish data, due to the nature of the tertiary analysis.

While the calculations were done in a straightforward manner, a brief exposition of the recoding system, which was used in the American data to reclassify data from categories generated by the questionnaire into categories meaningful for analysis of the hypotheses of this study, is in

22The computations were performed by computer for the American data and by calculator for the Swedish data.
order. The recoding was evidenced in all the analyses conducted for the American data, though obviously the particulars varied as the recategorizations changed for various hypotheses.

An example will be outlined for the independent variable religion, which hopefully details satisfactorily the general procedure for all variables, independent or dependent, which were recoded. On the questionnaire (See Appendix A), all variable values have some number. For religion, the values may be seen as "0" and "&" for None, "1" for Protestant, "2" for Roman Catholic, "3" for Jewish, "4" for Eastern Orthodox and "5" for Other. These are arbitrarily assigned. For the purposes of testing a particular hypothesis, these values might be converted into two categories, which were assigned values of one and two, or Catholic and non-Catholic respectively. This example is taken from the chi-square analysis of the American data, where rank of numerical ordering is not crucial. For purposes of clarity, it only need be remembered that while all the American data involved recoding, only in the regression analyses was the rank of numerical ordering actually crucial, and that dummy

23 All regression recoding, including that involving initially quantitative data, required careful attention to consistency in the process of meaningful ordering.

The dummy variable recoding is a special case of the regression recoding procedure. It applies only to the regression calculations where conversion from nominal into interval coding is necessary.
variables were used only in regression analyses where nominal data was encountered.

Particular issues with regard to the recoding will be discussed in Appendix B of this study.

A final word needs to be mentioned with respect to the quality of the data used in the study. The American data is unquestionably superior for a number of reasons. First, the sample is not as restricted to a particular segment of the population as is the Swedish data (see page thirty). Secondly, and this is not inherent in the data itself but in the form of availability, the American data was in form ready for data analysis rather than already analyzed, thus allowing free rein to variable combinations for the hypotheses within the range of variables. The Swedish data, on the other hand, had already been analyzed and analysis was thus limited to the multivariate combinations at hand. This placed a severe restriction on testing hypotheses relevant to Durkheim's theory, yet it is believed that valuable questions could still be posed from the Tec variables relevant to Durkheim.

In fact, some attempt was made to refine some of the Tec analyses, an effort which resulted in findings discrepant with that writer. This will be discussed more fully in the findings section.

Lastly, it is acknowledged that in a secondary analysis, no amount of sophisticated data analysis and
interpretation can alter or improve the data that one has to work with. Therefore it seems necessary to preface the findings with regard to the Tec study with the following caveat. Aside from the sample restrictions mentioned (see page thirty), Newman (1972r:16-17) claims the following flaws: Tec fails to explain why the N varies throughout her tables. An inordinately small number of cases exists in various cells. Also, correlations (sic) from which substantive conclusions are drawn are statistically insignificant. He also claims a lack of information as to response rates to either the sample as a whole or any part thereof. Also, Newman questions the operational definition of gambling, in which Tec limits gambling to football pools, which are in Newman's words

... universally submerged, in outlay as well as intensity, relative to other forms of gambling activity and which for wide circles ... has ... ceased to carry connotation of gambling at all.

Newman further notes a lack of emphasis in the definition on gambling volume as opposed to propensity.

Not all these criticisms are valid. Especially hollow are the claims of lack of information regarding response rates and nonsignificant correlations. As to the former claim, Tec (1964i:6fn.) notes 11% of the respondents to the gambling section of the larger survey "refused to be interviewed in whole or in part or could not be reached." As to the latter claim, nowhere does Tec compute any correlations,
or for that matter, any statistic. All her tables are in raw numbers and percentages. Thus no issue of statistical significance can be made of her data; it is fact one purpose of the present study to obtain a statistical refinement of the Tec data.

Also, no table to be used at least in the present study is too small cell-wise or N wise to satisfy minimum criteria for use of the chi-square statistic. Finally, while agreeing that football pools is too narrow a definition of gambling, the present writer does not believe that volume level is a sine qua non consideration in defining someone as a gambler. In fact, the very fact of low outlay widespread among gamblers which Newman points out suggests that volume not be a defining characteristic of the gambler. The present study seeks to separate the two selected facets, giving each independent status in characterizing gambling activity. However, the writer concurs with Newman in be-moaning the fact that only one table presented information on volume of gambling activity relevant for a Durkheimian analysis.

Hypotheses

The hypotheses for the United States data were selected to provide the best possible mixture of variables through utilization of Durkheim's integration indices balanced by germane supplemental variables. In regard to specifics, the
propensity facet of gambling suggests the following hypotheses:

1. Married Catholics with large families will gamble proportionately more than their counterparts, i.e., opposites (Durkheim corollary; see 1966j: Book 2, Ch. 2, sec. I; Book 2, Ch. 3, secs. II, IV).

2. Controlling for religion, women will benefit more, i.e., gamble proportionately more than men where a large family is involved (Durkheim corollary; see 1966k: Book 2, Ch. 3, sec. III).

3. Controlling for religion, men will gamble proportionately more than women, where a childless marriage is involved (Durkheim corollary; see 1966l: Book 2, Ch. 3, sec. III).

4. As gross income and occupational standing increase, but educational level and age decrease, propensity to gamble among individuals will increase (Durkheim, 1966m: Book 2, Ch. 4, sec. II; Book 2, Ch. 2, sec. III; Book 1, Ch. 2, sec. III).

The volume facet of gambling suggests the following hypotheses:

5. Married Catholics with large families will spend more money on gambling activities as a proportion of their gross incomes than their counterparts (Durkheim corollary; see 1966n: Book 2, Ch. 2, sec. I; Book 2, Ch. 3, sec. II, IV).
6. Controlling for religion, women will spend proportionately more of their total incomes than men on gambling activities, where a large family is involved (Durkheim corollary; see 1966o: Book 2, Ch. 3, sec. III).

7. Controlling for religion, men will spend more money on gambling activities as a proportion of their gross incomes than women, in those cases where a childless marriage is involved (Durkheim corollary; see 1966p: Book 2, Ch. 3, sec. III).

8. As gross income and occupational standing increase, but educational level and age decrease, volume of money spent on gambling activities as a proportion of gross income will increase (Durkheim corollary; see 1966q: Book 2, Ch. 4, sec. II; Book 2, Ch. 2, sec. III; Book 1, Ch. 2, sec. III).

The hypotheses for the Swedish data were also selected to provide the best possible blend of variables given the available data. Specifically, the propensity facet of gambling suggests the following hypotheses:

1. Gamblers will tend to express a higher degree of interest in friends than will non gamblers.

2. Gamblers will be drawn in proportionately greater numbers from higher classes (Durkheim corollary; see 1966r: Book 2, Ch. 4, sec. II, see occupational standing).
3. Gamblers will be drawn proportionately more often from lower educational levels, with class controlled (Durkheim corollary; see 1966s: Book 2, Ch. 2, sec. III).

4. Gamblers will be drawn in proportionately greater numbers from higher income groups, with class controlled.

5. Gamblers will tend to belong to voluntary associations more than non-gamblers, controlling for class.

6. Active churchgoers will tend to be gamblers more than non-churchgoers, controlling for class and type of church (Durkheim corollary; see 1966t: Book 2, Ch. II, sec. I).

The volume facet of gambling suggests the following hypothesis:

7. Gamblers will spend more money on wagers as a proportion of yearly income if they have relatively higher incomes.
PART II FINDINGS

CHAPTER II. GAMBLING IN THE UNITED STATES

CHAPTER III. GAMBLING IN SWEDEN
CHAPTER II

GAMBLING IN THE UNITED STATES

Preliminary Explanation of Indicators

Little more need be said regarding the dependent variables used in this research, gambling propensity and gambling volume, at this point in terms of their general theoretical significance. The choice of these two particular aspects of gambling as the focii of gambling behavior was made based on the exigencies of secondary analysis. The author was confined to using data collected by others. The ultimate division was based also on a desire for parsimony; since it is virtually a truism that no one actually wins at gambling, inclusion of a final variable available in the Gallup data, net profit, did not seem worth the cumbersomeness of analysis its inclusion would have created. In other words, the variables of volume and net profit seemed too alike to include both. While in terms of policy the latter variable might be significant, this study is not primarily a policy study. Also, volume unlike net profit gives a truer, unmuted picture of gambling and thus involvement in a social activity than does net profit, which contains figures which
can be misleading due to cancellation of activity by activity of the opposite kind (wins and losses).

Operationally, the basis for gambling volume and propensity indicators has already been discussed (see pages thirty-one and thirty-two). The logical bases for operationally defining the propensity to gamble and individual gambler volume as so indicated was simply to make the most literal translation between nominal and operational definitions that the data allowed. It was felt face validity of the operational definitions would be best served in this manner.

Of course, of crucial importance to the overall findings of the American data was the way cases were assigned the values of the operational variables, e.g., gamble or do not gamble. This discussion is fairly involved and is dealt with in the Appendix.

In terms of the independent variable indicators, again the two main questions which must be answered are: 1) What is the theoretical justification for the use of these indicators, and 2) What justification is there for the operational definitions chosen? These questions will be considered for each indicator seriatim. As a preliminary point, the theoretical justification for each is based on its supposed relation to the theoretical concept integration. The basic premise in terms of theoretical prediction is of course that the indicator used to measure the components of
integration will lead to accurate predictions of the gambling behavior of the individuals in the sample.

First, to the category of indicators used by Durkheim (1966v) specifically to measure integration (egoism). Here no elaborate justification of my use of indicators for the same purpose seems necessary. My remarks will thus be confined, to a brief exposition of Durkheim's rationale for using these indicators to reflect egoism.

The first of these indicators is religious preference. Here the basis hypothesis is that membership in a religious group which allows little room for individual judgment would be a factor in providing a strong attachment to society though the control of the individual's life pattern by the religious group. Thus, Durkheim reasoned, membership in a Protestant denomination, with its emphasis on individual thought, would loosen societal bonds in a person much more so than membership in the Catholic Church, with its greater emphasis on religious dogma and ritual. Judaism he considered as the extreme case of social control over an individual, as it exemplifies the minute ritualistic tenets of early religions.

Secondly, the indicator marital status was felt by Durkheim to reflect attachment to the basic primary group, the family, at least in the adult role. Thus unmarried individuals were deemed to be more detached than married people. In the same way, family size, especially for women,
acted for Durkheim as a barometer of attachment to family society. Thus, for women especially but also for men, increased family size in the family of procreation as indicative of more children tends to increase integration into society, especially when interaction between the members is high. Why women are more sensitive to family as opposed to merely conjugal society is only explained by their greater sensitivity to children (1966v:189).

The fourth variable, sex, is considered in conjunction with family size (which latter acts mainly as an intervening variable between sex and integration) as discussed above. In the case of this variable as with three in particular yet to be discussed, education, occupation and gross income, there is an especially interesting clear difference in prediction. Durkheim's predictions differ greatly in these cases as shall be seen on further examination. The latter three in particular provide the theory with a crucial opportunity for verification through conformity with a highly "non-commonsensical" pattern of social behavior.

The final variable used specifically as a measure of integration by Durkheim is that of education level. Here the rationale is that education level reflects the degree of strength of guideposts to behavior the society provides the individual. Thus rather then being a causal variable in the Durkheimian formulation, education is in a strict sense a
dependent variable, which along with the dependent variable gambling behavior varies according to the strength of the integration-providing norms. The norms in question are the behavioral injunctions of the Judaeo-Christian religions. The basic interplay between concept and indicator is the extent of encroachment of religious dogma into secular affairs and the encroachment's extension of the scope of societal integration to the individual.\footnote{The connection in this instance with both Weber (The Protestant Ethic and the Spirit of Capitalism) and Merton (the latent function idea) is too obvious to neglect mention.} The three chosen indicators, Protestantism, Catholicism and Judaism are appropriate as representing the mainstream of religion in contemporary America. They also are methodologically apt in providing a maximum variance of the independent variable, ranging from high encroachment with Judaism, through moderate encroachment for Catholics, to low encroachment for Protestants with that religion's antiauthoritarian philosophy and tradition of free inquiry.

The second category of indicators consists of measures of anomic or altruism in the Suicide classic which are adapted to the measurement of integration (egoism) in the present monograph. The first of these is the indicator age. This measure was used in Suicide (1966w:102) as an index of the extent of permeation of the force of collective life upon the individual. The fluctuations of social life
referred to seem to speak to the concept of anomie (see page twenty-seven). In this research, however, age will be used as an index of egoism, which of course is the integration measure used herein. The theoretical justification for such usage lies in presumption that integration of individuals in society varies by age. The operational definition chosen was simply age in years. Generally, the minimum does not reach below 15 years in our sample, but it should be remembered that age is not being used in the same way here as it was used in Suicide so that the comparison between child and adult is not crucial here. My prediction is that age varies inversely with integration, which is consistent with Durkheim's. Durkheim saw age varying inversely with integration, even though he was using age as an index of a concept other than egoism.²

The second and third indicators in this category, occupations (of head of household and of the respondent to the questionnaire), were used by Durkheim as an index of altruism (Suicide, 1966x:234). It should be mentioned that occupational stratification was really only dealt with superficially by Durkheim, an ironic fact as insofar as this subject was examined, it was dealt with in the context of military organizations, an extremely status-oriented form

²Consistency does not of course require the dependent variables used here and in Suicide to vary in the same direction, only that their variation be interpreted to mean the same thing.
of social structure. In truth, with respect to integration, Durkheim was more interested in the value-systems of military organizations than in their occupational hierarchy. In this research, however, occupational status will be related to integration with reference to egoism, namely, that as one's socio-economic status improves, his integration within the society will be enhanced. This position is basically consistent with Durkheim's, in the sense that egoism is non-altruism (and vice-versa), and presumably both qualities are occupation-graded. Of course, one might persuasively argue that a view more consistent with Durkheim's would predict that higher occupation would lead to less integration and thus less gambling. But this argument presupposes that occupational status need be connected to altruism, while this research views occupational status in a different light.

Operationally, both occupational measures (a dual measure was considered necessary in cases where the individual's social status derived from the status of another, e.g., husband or father) were based on occupational categories patterned after Edwards' social-economic grouping of occupations (Miller, 1970a:171). For all hypotheses applying to

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3 As Smelser (1971e:18) points out, an unresolved ambiguity with respect to Durkheim's continuums are when does the absence of trait A, which denotes cohesion, imply the presence of trait B, which denotes lack of cohesion?

4 The specific occupations were: professional, business or executive, clerical, sales workers, farmers, farm
the United States the following categories applied: in the higher occupational category labeled "professional" were included the categories professional, farmers (owners as opposed to farm laborers) and business or executive. All others were assigned to the lower, occupational category labeled "worker." Thus, fine distinctions were lost but consensus as to occupational differences seems more assured, and maximum variance of the independent variable is gained. Also, the Edwards categories did not deal with farm personnel and thus could not be followed with the precision that its six-category format requires, in that the farm occupations would have been arbitrarily fitted into one of these categories.

The third category of indicators consists of any index not used by Durkheim but available and useful to test integration. Availability was restricted to the data being used in this research, i.e., the Gallup data. Only one variable falls in this category, that of family gross income

5In terms of achievement of a continuous variable for the multiple regression, two points may be noted: first while only two occupational categories is certainly a discrete rather than continuous measure of the occupational range, six categories would still be discrete, as not all values between one and six are attainable. Thus the problem of continuous variables is encountered with the use of any occupational scale. Occupation is not a continuous variable. However, it may be added that the use of dummy variables to recast the quality of data to adjust to regression analysis is a standard procedure in social science research today. (Galtung, 1967a:521).
per year. This variable, as the previous one of occupation, is theoretically handled by the generic assumption that as one's socio-economic status in society improves, his level of integration within the society is enhanced.

Operationally, this variable was defined by placing individual respondents into the following yearly income brackets: under $1,000; $1,000 to $1,999; $2,000 to $2,999; $3,000 to $3,999; $4,000 to $4,999; $5,000 to $5,999; $6,000 to $6,999; $7,000 to $9,999; $10,000 to $11,999; $12,000 to $14,999, and $15,000 or more. Each value along the range was potentially represented in the data. One shortcoming of the initial data collection in the operationalizing of the variable is the lack of specificity with respect to the upper end of the range. Thus, we are left hanging as to the upper limit of the income range and further are unable to predict behavior of respondents within specified gradations of upper income brackets. Despite encouraging trends in the data available, we are thus forced to largely abandon characterization of upper (as opposed to upper middle) income groups at least on a firm empirical basis.

Of the aforementioned indicators, certain ones may be particularly useful as measures of integration. As indicated in the introduction (see page nine), recent sociological and psychological literature have stressed the integrative importance of marital status, i.e., the
importance of being married for diminishing a state of egoism. In general, it appears that variables such as marital status, age, religion, and perhaps family size as related to sex of spouse, may be more useful than the other variables.

A reason for this would be the impact of these variables on the whole of society, i.e., all its members, as opposed to segments of society based on social class, income, or educational characteristics. The fact that marital status, age, etc., are universal cohesion factors whose disposition in any one case need not be determined by social class or educational considerations makes their integrative impact on society greater than that of other kinds of variables.

As mentioned earlier (see page twenty-seven), anomie—a variable not used in this monograph—can apply to an entire society, and many of the indicators Durkheim used specifically to measure egoism, e.g., marital status, religious preference and family size (see page thirty-four in this monograph), also can apply to virtually anyone in society. The overall implication of course is that, as Durkheim foresaw with the thrust of his anomie concept as a case in point, factors that measure conditions of whole societies rather than segments of them may be the key ones in predicting the occurrence of egoism for aggregates of individuals.
Findings

At this point, the hypotheses which were proposed as the Durkheimian analogues for gambling with respect to our United States sample will be reiterated:

I. Gambling Propensity Hypotheses:

1. Married Catholics with large families will gamble proportionately more than their counterparts, i.e., opposites.

2. Controlling for religion, women will benefit more, i.e., gamble proportionately more than men where a large family is involved.

3. Controlling for religion, men will gamble proportionately more than women, where a childless marriage is involved.

4. As gross income and occupational standing increase, but educational level and age decrease, propensity to gamble among individuals will increase.

II. Gambling Volume Hypotheses:

5. Married Catholics with large families will spend more money on gambling activities as a proportion of their gross incomes than their counterparts.

6. Controlling for religion, women will spend proportionately more of their total incomes than men on gambling activities, where a large family is involved.

7. Controlling for religion, men will spend more money on gambling activities as a proportion of their gross incomes than women, in those cases where a childless marriage is involved.

8. As gross income and occupational standing increase, but educational level and age decrease, volume of money spent on gambling activities as a proportion of gross income will increase.
Gambling Propensity

Considering the matter of gambling propensity, the findings shall be examined for each hypothesis in turn.

1. Married Catholics with large families will gamble proportionately more than their counterparts, i.e., opposites.

The reasoning for this hypothesis is that one should be able to make a clear-cut theoretical prediction regarding individuals with all three "integrative" characteristics as against individuals with none of these characteristics if integration is reflected in social behavior.

As explained in chapter one (page thirty-five), a chi-square test of independence for k independent samples was performed for this hypotheses, with data at the nominal level of measure. The results are indicated in table 1 below:
Table 1: Gambling Propensity of Married Catholics with Large Families vs. Single Non-Catholics Without Families

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Married Catholics Large Families</th>
<th>Single Non-Catholics, no Family</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>15</td>
<td>45</td>
<td>60</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>48</td>
<td>202</td>
<td>250</td>
</tr>
<tr>
<td>Column Totals</td>
<td>63</td>
<td>247</td>
<td>310</td>
</tr>
</tbody>
</table>

Chi-square = .679  

As shown above the results indicate no existence of statistically significant relationship between the factors of integration and propensity to gamble at the .05 level of significance. Thus, Durkheim's position is unsupported for

6 The validity of this finding may be questioned by the fact that age is a possible causal variable which could explain gambling propensity and marital status alike, i.e., act as an antecedent variable making an apparently theoretically derived relationship, if achieved, spurious. This criticism can be answered in a number of ways: 1) external validity may be improved by not controlling for age by improving generalizability of findings; 2) the variable age, if operative would work against rather than for the prediction (lower age [single] individuals tend to gamble more); 3) variable selection is based more on approximation to Durkheim's variables than upon variables which explain much variance but do not fit with selected parts of his theory, and 4) in America, a low mean age of marriage (roughly 21) exists and has been constantly decreasing; thus for most of the sample, age is not a crucial factor in influencing marital status.
this realm of his theory for American gamblers. As no
statistical significance was achieved, no test of associa-
tion was conducted for this hypothesis.\footnote{Those cases in which a strong association is apparent despite a lack of statistical significance are often those with only a few cases (Garson, 1971a:153).}

2. Controlling for religion, women will benefit
more, i.e., gamble proportionately more than men where a
large family is involved.

In this hypothesis, the interest is in elaboration of
hypothesis one. Specifically, this hypothesis deals with
the ramifications of family size for the respective genders
in terms of integration. In this case, the marital status
of married is included as implied in the value of large
family within the variable family size. In the earlier
hypothesis, marital status was an explicit variable, as a
test of its singular integrative power against the non-
mARRIEd condition was sought. Also it is observed that re-
ligion is held constant in hypothesis two unlike in
hypothesis one. This is due to the narrower focus of
hypothesis two.
As indicated in chapter one, this hypothesis also was tested with the use of a chi-square test. The results are indicated in tables 2 and 3 below:

### Table 2: Gambling Propensity by Sex for Large Families, Catholics Only

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Women</th>
<th>Men</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>8</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>17</td>
<td>27</td>
<td>44</td>
</tr>
<tr>
<td><strong>Column Totals</strong></td>
<td><strong>25</strong></td>
<td><strong>34</strong></td>
<td><strong>59</strong></td>
</tr>
</tbody>
</table>

Chi-square = .479  \( p = .05 \)  df = 1

### Table 3: Gambling Propensity by Sex for Large Families for Non-Catholics

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Women</th>
<th>Men</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>15</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>40</td>
<td>42</td>
<td>82</td>
</tr>
<tr>
<td><strong>Column Totals</strong></td>
<td><strong>55</strong></td>
<td><strong>52</strong></td>
<td><strong>107</strong></td>
</tr>
</tbody>
</table>

Chi-square = .569  \( p = .05 \)  df = 1

As both tables 2 and 3 indicate, no statistically significant relationship is in evidence between sex and a
proportionately higher tendency to gamble, either for Catholics or non-Catholics, where a large family is involved. It may be interesting to note that in each of the three tables presented thus far, results are in the predicted direction, while admittedly well below the significance level statistically. Again however, Durkheim's position fails to receive any clear-cut support from the American data. Once again, no measure of association was performed due to lack of statistical significance.

3. Controlling for religion, men will gamble proportionately more than women, where a childless marriage is involved.

This hypothesis is merely the counterpart to hypothesis two. It examines the ramifications upon the sexes of the other level of family size, i.e., no children. The marital status of married is made explicit in this hypothesis, as the crucial comparison between the sexes is how they react to a particular condition of matrimony. A comparison of this hypothesis and hypothesis two yields the inference that theoretically, marriage per se has very different integrative strength for men from its strength for women. Once again, religion is controlled for in the hypothesis. As in the previous hypotheses, a chi-square test of independence was used. The results are observed in tables 4 and 5 on the following page.
Table 4. Gambling Propensity by Sex in a Childless Marriage, for Catholics

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Men</th>
<th>Women</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>21</td>
<td>12</td>
<td>33</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>38</td>
<td>39</td>
<td>77</td>
</tr>
<tr>
<td>Column Totals</td>
<td>59</td>
<td>51</td>
<td>110</td>
</tr>
</tbody>
</table>

Chi-square = 1.36  p = .05  df = 1

Table 5: Gambling Propensity by Sex in a Childless Marriage, Non Catholics

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Men</th>
<th>Women</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>40</td>
<td>13</td>
<td>53</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>170</td>
<td>130</td>
<td>300</td>
</tr>
<tr>
<td>Column Totals</td>
<td>210</td>
<td>143</td>
<td>353</td>
</tr>
</tbody>
</table>

Chi-square = 5.85  p = .05  df = 1: Yule's Q = .40

Here the results are mixed. No statistically significant relationship is found between sex and tendency to gamble for Catholics where a childless marriage is involved.\(^8\)

\(^8\)An objection may be raised here and in the previous hypothesis that interpretation is obscured by the potential situation of men and women in the sample being married and thus affecting (confounding) each other's relation to the dependent variable. While this is certainly possible, the
However, statistically significant results in the predicted direction are evidenced with respect to non-Catholics. The Yule's Q of .40 indicates a moderately strong relationship between sexual status and gambling propensity for this particular social category. Once again, it is noteworthy that in table 4, representing the level at which a significant relationship was not found, the distribution is in the predicted direction. Thus, with hypothesis three, Durkheim has received his first clear-cut support from the American data.

4. As gross income and occupational standing increase, but educational level and age decrease, propensity to gamble among individuals will increase.

Here, the interest lies mainly in examination of relationships using variables not used by Durkheim, either explicitly to measure egoism or used at all in *Suicide*. Only educational level does not fall into either of these categories (see page forty-eight and forty-nine). The theoretical significance and operational definition of these variables is discussed on pages forty-eight through fifty-two. The clear interval nature of two of the variables in the data, age and gross income, along with the concomitant small sample size (1596) vis-a-vis the total adult civilian population of the U.S. renders the possibility remote. Also, it is not altogether certain that such an eventuality would mitigate the relation between the proposed causally related variables. Durkheim likely would predict divergent gambling patterns among the spouses of the same conjugal unit.

Along with the potential use of dummy variables (see page 52fn.).
variation of the variables in the hypothesis dictated the use of a parametric, causal statistic. The multiple regression technique was thus performed on the data. The results are indicated in table 6 below:

Table 6: Gambling Propensity by Gross Income, Occupational Standing, Education Level, and Age

<table>
<thead>
<tr>
<th>The Regressed Variable</th>
<th>v. Gambling Propensity</th>
<th>Beta, by Direction (+ or -)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Income</td>
<td></td>
<td>.12</td>
</tr>
<tr>
<td>Occup Head Household</td>
<td></td>
<td>.09</td>
</tr>
<tr>
<td>Occup Respondent</td>
<td></td>
<td>-.04</td>
</tr>
<tr>
<td>Educational Level</td>
<td></td>
<td>N.S.</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-.13</td>
</tr>
</tbody>
</table>

Examining the beta weights, one finds a mixed picture. As predicted, gross income and gambling propensity are positively related, as is occupation of household head and gambling propensity. Also as predicted, a negative relationship (and a strong one) appears between age and gambling propensity. Two variables in the hypothesis, however, failed to conform to the variation pattern predicted in the hypothesis. The first is occupation of respondent, which varies negatively with propensity to gamble, a finding especially noteworthy in light of the opposite proclivity of the other
occupational measure. Second is the education variable which was of too low a value to be included in the regression equation.\(^\text{10}\)

Rather than prematurely conclude a failure in the theoretical or operational structure, a further analysis attempting elaboration of the interpretation of these variables and other proposed causal variables was conducted. This analysis was undertaken to control for possible masking effects which might obscure a theoretically predicted relationship. The two variables selected as theoretically likely candidates for masking effects on the variables occupation of respondent and education were the variables age and religion respectively.

Age, which is shown by the table to be negatively related to gambling propensity, can theoretically be presupposed to be positively related to one's occupational standing, on the grounds that as one proceeds through one's career-pattern, he will effect a number of advancements or promotions. Considering that for all occupational groupings adolescence should imply the lowest statuses, this generalization should hold true for all social classes. Thus, one might reasonably predict that insofar as lower age is a factor in higher gambling propensity, and the evidence shows

\(^{10}\)In the stepwise mode of multiple regression, variables not contributing significantly to the regression equation are not entered into the equation (Nie et al., 1970a: 180, 183).
it to be an important factor, this negative association would weaken the tendency for those in lesser status jobs to gamble less. This expectation is examined in tables 7-11 below:

Table 7: Gambling Propensity by Occupation of Respondent

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Gamble</td>
<td>74 (27.5)</td>
<td>167 (28.1)</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>195 (72.5)</td>
<td>428 (71.9)</td>
</tr>
<tr>
<td>Column Totals</td>
<td>269</td>
<td>595</td>
</tr>
</tbody>
</table>

Chi-square = .007  p = .05  df = 1

Table 8: Gambling Propensity by Occupation of Respondent, for Adolescents

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Gamble</td>
<td>19 (31.7)</td>
<td>59 (34.1)</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>41 (68.3)</td>
<td>114 (65.9)</td>
</tr>
<tr>
<td>Column Totals</td>
<td>60</td>
<td>173</td>
</tr>
</tbody>
</table>

Chi-square = .035  p = .05  df = 1

Adolescents: Age, 15-29; Young Adults, 30-44; Middle Aged, 45-49; Elderly, 60+
Table 9: Gambling Propensity by Occupation of Respondent, for Young Adults

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Gamble</td>
<td>22 (27.8)</td>
<td>56 (30.4)</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>57 (72.2)</td>
<td>128 (69.6)</td>
</tr>
<tr>
<td>Column Totals</td>
<td>79</td>
<td>184</td>
</tr>
</tbody>
</table>

Chi-square = .075  p = .05  df = 1

Table 10: Gambling Propensity by Occupation of Respondent, for Middle Aged Individuals

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Gamble</td>
<td>25 (26.6)</td>
<td>40 (23.7)</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>69 (73.4)</td>
<td>129 (76.3)</td>
</tr>
<tr>
<td>Column Totals</td>
<td>94</td>
<td>169</td>
</tr>
</tbody>
</table>

Chi-square = .143  p = .05  df = 1
Table 11: Gambling Propensity by Occupation of Respondent, for Elderly Individuals

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Gamble</td>
<td>7 (20.0)</td>
<td>9 (14.8)</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>28 (80.0)</td>
<td>52 (85.2)</td>
</tr>
<tr>
<td>Column Totals</td>
<td>35</td>
<td>61</td>
</tr>
</tbody>
</table>

Chi-square = .144  p = .05  df = 1

While no statistically significant findings exhibit themselves either in support for the previous data or for the hypothesis of masking variables, the findings are believed instructive in their directions of relationship. Table 7, which represents a nominal level statistical test of the identical relationship in hypothesis four performed initially by the interval based measure of stepwise multiple regression, mirrors the regression finding for occupation of respondent. Of main interest is the top row of cells, which show that workers gamble proportionately more than professionals by 28.1 percent to 27.5. Table 8, which examines the relationship for adolescents (15-29 years) shows a strong tendency for workers to indulge in gambling activity as opposed to professionals, by 34.1 to 31.7 percent. This disparity continues for young adults (30-44 years) in the
sample, of whom 30.4 gambled if they were workers, while 27.8 gambled if professionals (table 9).

An abrupt shift takes place in the middle aged (45-59 years) category. Here, 26.6 percent of professionals gambled, while only 23.7 percent of workers did so (table 10). This becomes a strong trend when examination of the elderly (60+ years) is done, which shows 20 percent of the professionals of this category had gambled, while 14.8 percent gambled in the worker category (see table 11).

The results must be interpreted against the logic behind the particular masking process and the manipulation of same process, which is as follows: Since the highest category of gamblers in terms of age are the young, one could reasonably expect a diminution the anomolous effect of age on the relation between one's own occupation and propensity to gamble by examining successively older individuals in the sample. In the first control category, namely adolescents, even though age is controlled by equalization for both occupational categories, the occupation variable did not operate as predicted. It may be hypothesized that this is due to the greater effect of age as a causal variable for this age group. In other words the nominal level statistic shows more accurately than the interval level statistic the relative contributory power of the variables.

Conversely, when one examines data where the relative proportion of gamblers is less, i.e., among older
individuals, occupational status becomes important for distinguishing between gamblers and non-gamblers. And it is at these age levels, i.e., middle age and elderly, that the hypothesis of higher occupation, by virtue of greater integration into society, leading to higher gambling propensity is borne out. Thus one can conclude that the anomalous finding for hypothesis four is spuriously so, and that on further examination occupation of respondent acts consistently with the companion occupational measure, head of household's occupation.

Religion acts towards education in the same way that age acts towards occupational status of respondent, i.e., as a causal variable. In terms of a three variable setup with gambling propensity as dependent variable, the relationship of the variable educational level to gambling propensity, according to Durkheim's theory, is that of concomitant variation but not causality. Thus, although the relationship between educational level and gambling propensity differs from the causal relationship of occupational status and gambling propensity, 12 both are subject to masking effects by third variables. The occupational

12 The main root difference is not that of lack of time ordering in one case, although this may be or may not be the case (between education and gambling propensity), but the assumption of an extraneous variable (religion) as totally responsible for the variation in gambling propensity produced by the variable education. Occupational status, however, is assumed to share causal status with age.
status, age, gambling propensity relationship is called a contingency relationship while the religion, education, gambling propensity relationship is called explanation (Mueller, 1970a:200):

contingency: age $\rightarrow$ occupation $\rightarrow$ gambling propensity

explanation: religion $\rightarrow$ education $\rightarrow$ gambling propensity

Thus removal of occupation of respondent would not negate a relationship between age and gambling propensity, but only alter it, while removal of religion would in all likelihood remove any correlation between education and gambling propensity.

The key test is not whether particular religions have higher gambling rates than others, which is a part of hypothesis one, but whether the predicted negative relation between educational level and gambling propensity obtains. The expectation for findings involving educational level by religious persuasion is that with certain religions, education will be positively related to gambling propensity, while a negative relation will occur within other religious groupings. This is based on the insignificant beta weight
of the education variable. The problem would then be one of resolving the differing findings by religious group with theoretical expectations. The results are listed below in tables 12-14:

Table 12: Gambling Propensity by Education Level

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Educational Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grade School</td>
</tr>
<tr>
<td>Gamble</td>
<td>37</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>247</td>
</tr>
<tr>
<td>Column Totals</td>
<td>284</td>
</tr>
<tr>
<td></td>
<td>High School</td>
</tr>
<tr>
<td>Gamble</td>
<td>182</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>599</td>
</tr>
<tr>
<td>Column Totals</td>
<td>781</td>
</tr>
<tr>
<td></td>
<td>Some College</td>
</tr>
<tr>
<td>Gamble</td>
<td>93</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>249</td>
</tr>
<tr>
<td>Column Totals</td>
<td>342</td>
</tr>
<tr>
<td></td>
<td>College Degree</td>
</tr>
<tr>
<td>Gamble</td>
<td>49</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>138</td>
</tr>
<tr>
<td>Column Totals</td>
<td>187</td>
</tr>
<tr>
<td></td>
<td>Totals</td>
</tr>
<tr>
<td>Gamble</td>
<td>361</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>1233</td>
</tr>
<tr>
<td>Column Totals</td>
<td>1594</td>
</tr>
</tbody>
</table>

Chi-square = 21.18  p = .05  df = 4

Gamma = -.196

13 There were too few cases of Jews in the sample to permit analysis of the relation between educational level and gambling propensity for this religious group (see Siegel, 1956a:110) using chi-square; thus the analysis is confined to Catholics and Protestants.
Table 13: Gambling Propensity by Education Level, for Protestants

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Educational Level</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grade School</td>
<td>High School</td>
<td>Some College</td>
<td>College Degree</td>
<td>Totals</td>
<td></td>
</tr>
<tr>
<td>Gamble</td>
<td>17</td>
<td>102</td>
<td>43</td>
<td>24</td>
<td>186</td>
<td></td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>162</td>
<td>391</td>
<td>162</td>
<td>80</td>
<td>795</td>
<td></td>
</tr>
<tr>
<td>Column Totals</td>
<td>179</td>
<td>493</td>
<td>205</td>
<td>104</td>
<td>981</td>
<td></td>
</tr>
</tbody>
</table>

Chi-square = 13.33  \( p = .05 \)  df = 4

Gamma = -.194

Table 14: Gambling Propensity by Education Level, for Catholics

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Educational Level</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Grade School</td>
<td>High School</td>
<td>Some College</td>
<td>College Degree</td>
<td>Totals</td>
<td></td>
</tr>
<tr>
<td>Gamble</td>
<td>19</td>
<td>63</td>
<td>35</td>
<td>18</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>57</td>
<td>171</td>
<td>52</td>
<td>26</td>
<td>306</td>
<td></td>
</tr>
<tr>
<td>Column Totals</td>
<td>76</td>
<td>234</td>
<td>87</td>
<td>44</td>
<td>441</td>
<td></td>
</tr>
</tbody>
</table>

Chi-square = 9.063  \( p = .05 \)  df = 4

Gamma = -.227
The results indicate statistical significance for tables 12 and 13, but not for table 14, i.e., for overall findings and for Protestants, but not for Catholics. The finding of significance for the analysis containing the entire sample seemingly conflicts with the insignificant beta weight. However, the fact that chi-square, as all nonparametric tests, achieves significance more readily simply by having a large N (Siegel, 1956b:31), may account for it. More significantly, beta weights are measures of strength of relationship, and thus should be compared against like measures, i.e., against the gammas. (One sees that the gamma of -.196 is small, and thus compares reasonably well with the initial discrepant finding that prompted this elaboration. With this in mind, it may be possible to dismiss the chi-square discrepancies for Protestants and Catholics as simply a function of the statistic itself).

Be that as it may, the important finding is that the tendency for the sample as a whole (including Jews) and for Protestants and Catholics individually is to gamble as their education level increases. This is reflected in the cell proportions and the negative gammas (-.194 for Protestants and -.227 for Catholics). Thus, Durkheim's predictions with regards to educational achievement and integration as interpreted here with gambling data are not supported by the elaboration. In fact, they are put in worse light than
in the regression, where the relationship was merely insignificant and not explicitly contrary to predictions.

Gambling Volume

The matter of gambling volume shall be proceeded with in like manner, examining the findings for each hypothesis.

5. Married Catholics with large families will spend more money on gambling activities as a proportion of their gross incomes than their counterparts.

With this hypothesis as with all in this section, one may refer to the reasoning behind hypotheses one through four (pages fifty-six through sixty-two), rendered immediately after each hypothesis is stated. The theoretical form is identical in the gambling propensity and gambling volume hypotheses. Thus hypothesis one parallels hypothesis five, two parallels six and so on. The only difference in the hypotheses is that the outputs are different. Further discussion of gambling volume as an output, including its independence from gambling propensity, its operational definition, and its selection for use are contained on pages thirty-one, thirty-two, forty-five and forty-six.

Also as with the first four hypotheses, nominal level data used in comparison oriented hypotheses were tested with the use of the chi-square test of independence for k independent samples, along with gammas to test strength of relationship where appropriate. Similarly, interval level
data used in hypotheses postulating concomitant variation were tested with multiple regression analysis as with the gambling propensity hypotheses.

The results of hypothesis five, a comparison-type proposition with nominal level data, are indicated in table 15 below:

Table 15: Gambling Volume of Married Catholics with Large Families vs. Single Non-Catholics without Families

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Married Catholics, Large Families</th>
<th>Single, Non-Catholics, no Family</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>127</td>
<td>57</td>
<td>184</td>
</tr>
<tr>
<td>High</td>
<td>113</td>
<td>7</td>
<td>120</td>
</tr>
<tr>
<td>Column Totals</td>
<td>240</td>
<td>64</td>
<td>304</td>
</tr>
</tbody>
</table>

Chi-square = 26.138  p = .05  df = 1
Yule's Q = -.757

As shown above, the results indicate a significant relationship statistically between the factors of integration and volume of gambling expenditure at the .05 level of significance. The problem of age as a causal variable is dealt with on page 57fn., and the discussion applies here as well. One may conclude that Durkheim's position is supported for the volume aspect of gambling for Americans. A Yule's
Q test showed a strong relationship between the variables with a reading of -.757.

6. Controlling for religion, women will spend proportionately more of their total incomes than men on gambling activities, where a large family is involved.

For this hypothesis, the chi-square test yielded the results seen below in tables 16 and 17:

Table 16: Gambling Volume by Sex with Large Families, for Catholics

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Women</th>
<th>Men</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>19</td>
<td>33</td>
<td>52</td>
</tr>
<tr>
<td>High</td>
<td>6</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Column Totals</td>
<td>25</td>
<td>34</td>
<td>59</td>
</tr>
</tbody>
</table>

Chi-square = 4.262  p = .05  df = 1

Yule's Q = -.825
Table 17: Gambling Volume by Sex with Large Families, Non-Catholics

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Women</th>
<th>Men</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>44</td>
<td>48</td>
<td>92</td>
</tr>
<tr>
<td>High</td>
<td>11</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>Column Totals</td>
<td>55</td>
<td>51</td>
<td>106</td>
</tr>
</tbody>
</table>

Chi-square = 3.452  p = .05  df = 1

As tables 16 and 17 indicate, statistical significance is achieved at the .05 level of significance for Catholics. No statistically significant relationship is in evidence for non-Catholics. Thus the relationship between sex and gambling expenditure as a proportion of total income with the presence of a large family is partially but not totally confirmed. The case for non-Catholics, while not quite statistically significant, does lie in the predicted direction. A Yule's Q test for the statistically significant case, i.e., Catholics, yielded a value of -.825, indicative of an extremely strong relationship between the relevant variables. Thus, Durkheim's position receives partial support with respect to hypothesis six.

7. Controlling for religion, men will spend more money on gambling activities as a proportion of their gross incomes than women, in those cases where a childless marriage is involved.
For this hypothesis, the chi-square test yielded the results shown below in Table 18 and 19:

Table 18: Gambling Volume by Sex in a Childless Marriage, for Catholics

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Men</th>
<th>Women</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>39</td>
<td>39</td>
<td>78</td>
</tr>
<tr>
<td>High</td>
<td>19</td>
<td>10</td>
<td>29</td>
</tr>
<tr>
<td>Column Totals</td>
<td>58</td>
<td>49</td>
<td>107</td>
</tr>
</tbody>
</table>

Chi-square = 1.4731  p = .05  df = 1

Table 19: Gambling Volume by Sex in a Childless Marriage, Non-Catholics

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Men</th>
<th>Women</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>154</td>
<td>109</td>
<td>263</td>
</tr>
<tr>
<td>High</td>
<td>52</td>
<td>33</td>
<td>85</td>
</tr>
<tr>
<td>Column Totals</td>
<td>206</td>
<td>142</td>
<td>348</td>
</tr>
</tbody>
</table>

Chi-square = .09  p = .05  df = 1

These tables demonstrate that no statistically significant relationship exists between sex and gambling volume, for Catholics or non-Catholics where a marriage without children is involved. However the results are in the predicted
direction, even though well below the minimum value required for significance at the .05 level. No measure of association was performed due to lack of statistical significance. Despite the lack of clear-cut support for the hypothesis from the American data, it is interesting to note the reversal between hypotheses in percentages of gambling intensity for men and women. This phenomenon would seemingly not be considered by most perspectives, but its occurrence lies in a pattern predicted by Durkheim's theory.¹⁴

8. As gross income and occupational standing increase, but educational level and age decrease, volume of money spent on gambling activities as a proportion of gross income will increase.

For this hypothesis, a concomitant variation type proposition with interval level data (see pages sixty-two and sixty-three), the results are indicated in table 20 below:

¹⁴As with hypothesis five, objections to both hypotheses six and seven mirror those of the parallel gambling propensity hypotheses and are discussed with reference to those, although the discussion is applicable to these hypotheses also. See pages sixty-one and sixty-two, fn.
Examination of the beta weights yields a generally congruent picture in relation to the hypothesis. As predicted, positive relationships exist between gross income and gambling volume, and between occupation of head of household and gambling volume. The former relationship is much weaker than in the case of gambling propensity, indicating that amount of money one earns is a relatively weak measure of how heavily one gambles, despite being a good index of indulgence in gambling activity.

Also as predicted, negative relationships obtain between educational level and gambling volume and between age and gambling volume. The age value is noteworthy in its consistency with the output of gambling propensity; in both cases age registers a -.13 beta weight. As with the first output, the variable occupation of respondent varies in a
manner contrary to prediction. This variable is negatively related to gambling volume. Once again, one is faced with an incongruous disparity between behavior of the occupational measures.

As previously done, occupation of respondent was elaborated in its relationship to gambling volume against the variable age. The rationale for this analysis is explained above (see pages sixty-four and sixty-five). The results are given on the following pages in tables 21-25:¹⁵

Table 21: Gambling Volume by Occupation of Respondent

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>212 (80.0)</td>
<td>643</td>
</tr>
<tr>
<td>High</td>
<td>53 (20.0)</td>
<td>109</td>
</tr>
<tr>
<td>Column Totals</td>
<td>265</td>
<td>487</td>
</tr>
</tbody>
</table>

Chi-square = 3.917  p = .05  df = 1

Yule's Q = .183

¹⁵For age demarcations, see page 65 fn.
Table 22: Gambling Volume by Occupation of Respondent, for Adolescents

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>46 (79.3)</td>
<td>164</td>
</tr>
<tr>
<td>High</td>
<td>12 (20.7)</td>
<td>65</td>
</tr>
<tr>
<td>Column Totals</td>
<td>58</td>
<td>171</td>
</tr>
</tbody>
</table>

Chi-square = 1.784  \( p = .05 \)  df = 1

Table 23: Gambling Volume by Occupation of Respondent, for Young Adults

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>68 (86.1)</td>
<td>199</td>
</tr>
<tr>
<td>High</td>
<td>11 (13.9)</td>
<td>62</td>
</tr>
<tr>
<td>Column Totals</td>
<td>79</td>
<td>182</td>
</tr>
</tbody>
</table>

Chi-square = 5.292  \( p = .05 \)  df = 1

Yule's Q = .413
Table 24: Gambling Volume by Occupation of Respondent, for Middle Aged Individuals

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>76 (80.9)</td>
<td>136 (80.5)</td>
</tr>
<tr>
<td>High</td>
<td>18 (19.1)</td>
<td>33 (19.5)</td>
</tr>
<tr>
<td>Column Totals</td>
<td>94</td>
<td>169</td>
</tr>
</tbody>
</table>

Chi-square = .008  p = .05  df = 1

Table 25: Gambling Volume by Occupation of Respondent, for Elderly Individuals

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Occupation of Respondent</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Professional Worker</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>22 (66.7)</td>
<td>41 (70.7)</td>
</tr>
<tr>
<td>High</td>
<td>11 (33.3)</td>
<td>17 (29.3)</td>
</tr>
<tr>
<td>Column Totals</td>
<td>33</td>
<td>58</td>
</tr>
</tbody>
</table>

Chi-square = .027  p = .05  df = 1

The pattern revealed in this elaboration analysis is similar to the parallel one developed for the output variable of gambling propensity, although the masking phenomenon of age persists here into the category of elderly individuals.
The first finding is in table 21, which represents the nominal level test of the relationship initially tested with stepwise multiple regression analysis, and whose results mirror those of the interval test in terms of occupation of respondent. Of main interest is the bottom row of cells, which shows that workers are greater gambling spenders than professionals by 26.6 to 20.0 percent. Table 22, which examines the relationship for adolescents, shows a marked tendency for workers to spend proportionately more on gambling than professionals by 31.0 to 20.7 percent. This tendency is strengthened for the young adult group, where the percentages of workers and professionals in the higher expenditure category is 28.0 to 15.9 (table 23).

Contrary to the gambling propensity output, the trend continues, although just barely, in the middle aged category (table 24), where 19.5 of the workers gambled at the higher rate, and 19.1 professionals did so. This continuation in direction of results beyond the limit of the previous output probably could be expected based on the more substantial beta weight for gambling volume (−.10) than for gambling propensity (−.04). However, it is believed that the explanation of a masking variable still obtains. For the final category, the elderly (table 25), the weakened trend for greater worker activity shifts into the predicted pattern, as 33.3 percent of the professionals as opposed to 29.3 of workers gambled at the higher proportion.
In terms of statistically significant findings, two in the above analysis were significant at the .05 level, namely the unpartialled negative relationship between occupation of respondent and gambling volume, and the negative relationship between these variables for young adults. The Yule's Q's for these findings were .183 and .413 for tables 21 and 23 respectively.

The results of this analysis seem to demonstrate the same masking phenomenon evident with respect to gambling propensity. That is, in terms of the gambling volume output, age is an all-important factor which tends to obscure or mask the occupation of respondent variable at lower age levels, where the effect of age on gambling volume is most pronounced. This interpretation supports the contention that occupation of respondent does act in the predicted manner in relation to gambling volume, but is neutralized by the potent age variable. Insofar as this interpretation is correct, one may conclude that occupation of respondent probably acts consistently with the companion occupational measure, occupation of head of household.
CHAPTER III

GAMBLING IN SWEDEN

Preliminary Explanation of Indicators

As with the United States data, gambling behavior for Sweden for the relevant period (1954) was conceptualized in terms of gambling propensity and gambling volume. Both outputs were among findings available from Tec's reanalysis, a welcome fact in light of the consistency this offered with the output use in the American analysis.

Once again, selection of indicators was shaped around two major issues: 1) What theoretical justification is there for the selection? 2) What justification exists for the operational definitions used? With respect to the dependent variables of gambling propensity and volume, the theoretical justification was made in the first chapter in terms of social activity (see page thirty-one).

Operationally, the indices for both outputs were

\[1\] In one hypothesis only, propensity to gamble is used as an independent variable in the Swedish data. The dependent variable in this case is expressed interest in friends, which as the independent variables normally do in this study, intends to reflect integration. The reversal of variables in the one instance was necessary to accurately describe the particular relationship depicted in the Tec study.

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discussed earlier (pages thirty-one and thirty-two). It will be noted that these are adjusted from those employed in the U.S. analysis, both upward. The similar direction of adjustment may be more than coincidental; however, they were arrived at through different means and contingencies. The propensity output was lifted from the propensity definition in the Tec study, inasmuch as not having the data precluded any redefinition. The volume definition, arrived at through a ratio of the mean gambling sum and mean yearly income, happened to be higher than the figure for the United States.

In terms of the independent variable indicators, the theoretical justification for them all is the supposed relation to the concept of integration as used in Durkheim's *Suicide*. As with the American data, the basic premise in terms of prediction from theory is that the index used to measure the components of integration will lead to accurate predictions of the gambling behavior of the individuals in the sample. A discussion of individual indicators follows.

The first set of indicators contains those used by Durkheim in *Suicide* specifically to measure integration (i.e., egoism in this study). Remarks will be confined here, as in the previous chapter, to Durkheim's rationale for using these indicators to reflect egoism.

The single index in this category is educational level. The rationale for this indicator for the American sample is
the same as that for the Swedish sample, and is given on page forty-eight. One modification is that religious groupings are state as against free church rather than Protestant, Catholic and Jewish. However, the relationship between religion and education follows the established Durkheimian reasoning and the differing religious categorization does not affect the prediction of the relationship between education and gambling behavior.\textsuperscript{2}

The second category of indicators consists of measures of anomie or altruism in \textit{Suicide} which are adapted to the measurement of egoism in the present monograph. The only index in this category for the Swedish data is occupational class, a product of Tec's regrouping of occupations into social class. The discussion of occupation as an index of altruism occurs on page fifty herein. Its use as an index of egoism is contained on pages fifty and fifty-one.

To briefly summarize the latter position, one's integration within society is seen as enhanced as one's socioeconomic status improves.

Operationally, the Tec reclassification of upper, middle and lower occupational classes was followed. These groupings and the categorization of occupations into them

\textsuperscript{2}This is so not because different religions would have no effect on integration patterns but simple because the relevant hypotheses deal with the direct relationship of education to gambling output and not with religious affiliation.
were followed verbatim because no other option was available given the tertiary nature of my analysis.

The third category of indicators consists of indices not used by Durkheim, but available in either the American or in both data sets, and deemed useful for testing egoism. The Swedish data contains four variables of this type.

The first of these is expressed interest in friends. As detailed earlier, (page eighty-six, fn. 1) this particular variable is technically misplaced in being in this category, as it is a dependent variable. However, it is placed with the independent variables because it is an index of integration (egoism) as are all the independent variables. The particular theoretical justification for the choice of this measure is its face validity in terms of what is known about egoism. One of the key facets of egoism as defined by Durkheim (1966y:279) is isolation from others, which is identical it would seem or at least very akin to expressed interest in friends. Operationally, the Tec study gives a full range to possible expressed degrees of interest, ranging from none to the main interest one has. These are considered as influenced by one's propensity to gamble.3

The second indicator in this category is yearly

3One seemingly can further defend this ordering of variables by their temporal feasibility—one's gambling time could preclude interest in friendships, while gambling propensity would be less likely to act as a cause of such variables as social class, education or income.
income. The theoretical justification for this index is discussed in the previous chapter on page fifty-three and centers on the presumed relationship between socio-economic status and integration (egoism). Operationally, here as with all the variables in the Swedish data, Tec's presentation was necessarily relied upon. Income for the propensity outcome were arrayed from below and including 3000 kronor per year to an upper category of over 20 thousand kronor per year. The complete breakdown will be presented in the relevant tables (30,31). As for the categories employed for the volume output, these were just two in number, up to 6000 kronor per annum and over 6000 kronor per annum.

The third indicator, membership in voluntary associations, is theoretically justified by its apparent relationship to the concept of egoism. As with expressed interest in friends, this topic from the Tec study seemed to touch closely on the variability of strength of ties linking the individual with others (see Durkheim, 1966z:281) which characterizes the issue of egoism. Operationally, the definition applied is simply the straightforward membership or non-membership in any voluntary association.

The fourth and final index in the final category is religious attendance, a variable akin to Durkheim's religious affiliation variable and patently of interest for that reason. The theoretical rationale for use of this variable is
simply that it seems to be a viable integration index, with active churchgoers possessing a specific societal bond and thus presumably more socially integrated according to Durkheimian criteria than non attenders. Religious affiliation, which apparently has bearing on church attendance (Tomasson, 1970a:75), was controlled for while examining the effect of religious attendance per se. No data examining the effect of religious affiliation on gambling behavior as causal and dependent variables, respectively, were available. Presumably any such analysis would entail great caution in attempting to establish proper categories; state and free church is an artificial distinction in terms of doctrinal distinctions of the sort in which Durkheim was interested, and yet these categories constitute the most likely found in contemporary studies of Sweden.

Operationally, religious attendance is defined in Tec's study as whether an individual attended church at all during a specified period preceding administration of the questionnaire. If so, the person was classified as an active churchgoer; otherwise, as a nonchurchgoer.

Findings

At this juncture, the hypotheses proposed as tests of Durkheim's integration conceptualization will be repeated with the focus on Swedish gambling behavior.
I. Gambling propensity hypotheses

1. Gamblers will tend to express a higher degree of interest in friends than will non gamblers.

2. Gamblers will be drawn in proportionately greater numbers from higher classes.

3. Gamblers will be drawn proportionately more often from lower educational levels, with class controlled.

4. Gamblers will be drawn in proportionately greater numbers from higher income groups, with class controlled.

5. Gamblers will tend to be members of voluntary associations more than non gamblers, controlling for class.

6. Active churchgoers will tend to be gamblers more than nonchurchgoers, controlling for class and for type of church.

II. Gambling volume hypotheses

7. Gamblers will spend more money on wagers as a proportion of yearly income if they have relatively higher incomes.

Gambling Propensity

Considering the gambling propensity aspect first, the findings for each hypothesis shall be examined in turn.

---

4 The paucity of the Swedish facet of the study with respect to volume hypotheses is due to a corresponding lack of appropriate hypotheses in the Tec study.
1. Gamblers will tend to express a higher degree of interest in friends than will non-gamblers.

The logic of this hypothesis is that the relatively socially active individual will be more in various social networks, in spite of any loss of time and energy incurred in a potentially consuming social activity such as gambling. Thus the effect of social activity is deemed of greater weight as a stimulus to social life than its commitments are a distraction from social life.

As explained in chapter one (page thirty-five), a chi-square test of independence for k independent samples was performed for this hypothesis with data at the nominal level of measure. The results are indicated in table 26 below:
Table 26: Interest in Friends by Gambling Propensity

<table>
<thead>
<tr>
<th>Expressed Interest in Friends</th>
<th>Yes</th>
<th>No</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>8</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Slight</td>
<td>84</td>
<td>77</td>
<td>161</td>
</tr>
<tr>
<td>Moderate</td>
<td>138</td>
<td>113</td>
<td>251</td>
</tr>
<tr>
<td>Great</td>
<td>168</td>
<td>146</td>
<td>314</td>
</tr>
<tr>
<td>Main</td>
<td>21</td>
<td>22</td>
<td>43</td>
</tr>
<tr>
<td>Column Totals</td>
<td>419</td>
<td>365</td>
<td>784</td>
</tr>
</tbody>
</table>

Chi-square = .69  \( p = .05 \)  \( df = 4 \)

As indicated above, the results do not indicate existence of a statistically significant relationship between propensity to gamble and expressed interest in friends at the .05 level of significance. Thus, Durkheim's position as conceived in this study is unsupported by this facet of the Swedish data. As no statistical significance was achieved, no test of association was conducted for this hypothesis.

2. Gamblers will be drawn in proportionately greater numbers from higher classes.

The rationale here, as is the rationale for the parallel hypotheses regarding the American data, is that as one's socio-economic status improves, one's egoism diminishes and one's integration into the society increases. This would
logically manifest itself in a greater likelihood of gambling activity for those of higher social statuses. As previously indicated, this hypothesis also was tested with a chi-square test of independence for \( k \) independent samples. The results are seen in table 27 below:

Table 27: Gambling Propensity by Occupational Class

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Occupational Class</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Gamble</td>
<td>243</td>
</tr>
<tr>
<td>Do not gamble</td>
<td>162</td>
</tr>
<tr>
<td>Column totals</td>
<td>405</td>
</tr>
</tbody>
</table>

Chi-square = 19.97 \( p = .05 \) \( df = 2 \) Gamma = .29

As shown above, the results indicate a statistically significant relationship between social class and propensity to gamble at the .05 level of significance. A gamma of .29 indicated a fairly weak relationship between the two variables in terms of strength of association. The directionality of this finding is opposite to that predicted by the Durkheimian position as adapted here.

3. Gamblers will be drawn proportionately more often from lower educational levels, with class controlled.

Here, as in the corresponding hypotheses about American
gambling patterns, educational level is viewed as an index of strength of norms provided the individual by the society. Specifically, education is viewed as a symptom of a spirit of free inquiry which in itself evolves along with lack of norms to structure behavior. Insofar as such norms provide societal support to the individual, one would posit that the greater the level of education, the less the integration into the society and the greater the egoism of the individual; conversely, the lower the level of education, the greater the integration of the individual into the society.

Once again, a chi-square test of independence was used. The results are given in tables 28 and 29 below:

5The support referred to is typified by what Berger calls the "institutional imperative," that is, the reduction of overwhelming numbers of behavior options (1963a:88-89).
Table 28: Gambling Propensity by Education, Upper and Middle Classes

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Grade School</th>
<th>High School</th>
<th>Some College</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>127</td>
<td>49</td>
<td>19</td>
<td>195</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>138</td>
<td>76</td>
<td>39</td>
<td>253</td>
</tr>
<tr>
<td>Column Totals</td>
<td>265</td>
<td>125</td>
<td>58</td>
<td>448</td>
</tr>
</tbody>
</table>

Chi-square = 5.81  p = .05  df = 2

Table 29: Gambling Propensity by Education, Lower Class

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Grade School</th>
<th>High School</th>
<th>Some College</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>222</td>
<td>18</td>
<td>8</td>
<td>248</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>148</td>
<td>11</td>
<td>2</td>
<td>161</td>
</tr>
<tr>
<td>Column Totals</td>
<td>370</td>
<td>29</td>
<td>10</td>
<td>409</td>
</tr>
</tbody>
</table>

Chi-square = 1.65  p = .05  df = 2

As indicated above, neither tables 28 or 29 indicate existence of a statistically significant relationship between educational level and tendency to gamble at the .05 level of significance. Thus, Durkheim's position with respect to the
use of educational level as an index of normative strength does not find support from the Swedish data. With no significance, no test of association was conducted for hypothesis three. Interestingly, results were in the predicted direction for upper and middle class individuals but not for the lower class sampling, which arrayed itself in the direction opposite that predicted.

4. Gamblers will be drawn in proportionately greater numbers from higher income groups, with class controlled.

Here, the expectation is for a positive relationship between the independent variable, in this case income and tendency to gamble. The basis for this expectation, as in hypothesis two, is the postulated positive relationship between socio-economic status and degree of integration; or conversely, a negative relationship between socio-economic status and egoism. As with the other hypotheses, a chi-square test of independence was used. The results are given below in tables 30 and 31:
Table 30: Gambling Propensity by Income, Upper and Middle Class

<table>
<thead>
<tr>
<th>Yearly Income (in kronor)</th>
<th>Gambling Propensity</th>
<th>Up to 3000</th>
<th>3000- 7999</th>
<th>8000- 11999</th>
<th>12000- 20000</th>
<th>Over 20000</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>11</td>
<td>40</td>
<td>66</td>
<td>47</td>
<td>13</td>
<td></td>
<td>177</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>19</td>
<td>62</td>
<td>63</td>
<td>51</td>
<td>18</td>
<td></td>
<td>213</td>
</tr>
<tr>
<td>Column Totals</td>
<td>30</td>
<td>102</td>
<td>129</td>
<td>98</td>
<td>31</td>
<td></td>
<td>390</td>
</tr>
</tbody>
</table>

Chi-square = 4.59  p = .05  df = 4

Table 31: Gambling Propensity by Income, Lower Class

<table>
<thead>
<tr>
<th>Yearly Income (in kronor)</th>
<th>Gambling Propensity</th>
<th>Up to 3000</th>
<th>3000- 7999</th>
<th>8000- 11999</th>
<th>12000- 20000</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>6</td>
<td>76</td>
<td>131</td>
<td>26</td>
<td>239</td>
<td></td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>11</td>
<td>57</td>
<td>77</td>
<td>14</td>
<td>159</td>
<td></td>
</tr>
<tr>
<td>Column Totals</td>
<td>17</td>
<td>133</td>
<td>208</td>
<td>40</td>
<td>398</td>
<td></td>
</tr>
</tbody>
</table>

Chi-square = 6.13  p = .05  df = 3
As indicated above, neither tables 30 or 31 show a statistically significant relationship between yearly income and tendency to gamble at the .05 level of significance. Thus, once again, Durkheim's position as conceived in this study fails to gain support from the Swedish data. Thus, no test of association was conducted. Of minor interest is that for the lower class, despite lack of statistical significance, results were in the direction predicted by the hypothesis. Upper and middle class individuals did not show a consistent pattern of gambling with respect to income level.

5. Gamblers will tend to belong to voluntary associations more than non-gamblers, controlling for class.

The rationale for this hypothesis is similar to that of the first hypothesis; in fact, the only difference is that the order of variables is reversed. Thus, one expects that individuals enmeshed in social networks will be more likely than those who are not to also be more bound up in social activity. Thus, members of voluntary associations

---

6It is interesting to note that when income categories are shifted to 3000 kr. and below per year as against 3000 kr. and above per year, the lower class results do show a statistically significant result at the .05 level and in the direction predicted by the hypothesis. The gamma is a moderately high -.49. The upper and middle classes, while not showing statistical significance, are in the predicted direction, by 46% gamblers among higher income groups to 37% for the lower income groups. The theoretical significance of this shift in findings will be discussed in the concluding chapter.
should be more likely to gamble than non-joiners. Here once again, a chi-square test of independence is used to test the data. The results are given below in tables 32 and 33:

Table 32: Gambling Propensity and Membership in Voluntary Associations, Upper and Middle Class

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Voluntary Association Membership</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Member</td>
<td>Non-Member</td>
</tr>
<tr>
<td>Gamble</td>
<td>186</td>
<td>66</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>265</td>
<td>66</td>
</tr>
<tr>
<td>Column Totals</td>
<td>451</td>
<td>132</td>
</tr>
</tbody>
</table>

Chi-square = 3.16  p = .05  df = 1

Table 33: Gambling Propensity and Membership in Voluntary Associations, Lower Class

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Voluntary Association Membership</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Member</td>
<td>Non-member</td>
</tr>
<tr>
<td>Gamble</td>
<td>194</td>
<td>112</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>109</td>
<td>85</td>
</tr>
<tr>
<td>Column Totals</td>
<td>303</td>
<td>197</td>
</tr>
</tbody>
</table>

Chi-square = 2.35  p = .05  df = 1
As can be seen above, neither tables 32 or 33 indicate existence of a statistically significant relationship between membership in voluntary associations and propensity to gamble at the .05 level of significance. Thus, Durkheim's position as extrapolated in this study fails to gain support from the sampled Swedish population. Thus, no test of association was conducted. No conclusive statement can be made regarding the findings, as their directions were at variance. In the upper and middle class category, results were in the direction opposite from that which was predicted; for the lower class grouping, results do lie in the predicted direction.

6. Active churchgoers will tend to be gamblers more than nonchurchgoers, controlling for class and for type of church.

The Durkheimian expectation, as extrapolated, would presumably be greater gambling propensity among the category with the greater societal linkages, ceteris paribus. Thus one expects churchgoers more often to be gamblers than those not attending church, inasmuch as integration is posited as predictive of relatively greater social activity. To test this expectation, a chi-square test of independence is once again used. The results are seen below in tables 34-37:
### Table 34: Gambling Propensity by Church Attendance, Upper and Middle Class, State Church

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Church Attendance</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>Attend</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Do Not Attend</td>
<td></td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td></td>
<td>43</td>
</tr>
<tr>
<td>Column Totals</td>
<td></td>
<td>59</td>
</tr>
</tbody>
</table>

Chi-square = 8.98  \( p = .05 \)  \( df = 1 \)  Yule's Q = -.43

### Table 35: Gambling Propensity by Church, Lower Classes, State Church

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Church Attendance</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gamble</td>
<td>Attend</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Do Not Attend</td>
<td></td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Column Totals</td>
<td></td>
<td>34</td>
</tr>
</tbody>
</table>

Chi-square = .4  \( p = .05 \)  \( df = 1 \)
Table 36: Gambling Propensity by Church Attendance, Upper and Middle Class, Free Churches

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Church Attendance</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attend</td>
<td>Do Not Attend</td>
</tr>
<tr>
<td>Gamble</td>
<td>5</td>
<td>174</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>27</td>
<td>196</td>
</tr>
<tr>
<td>Column Totals</td>
<td>32</td>
<td>370</td>
</tr>
</tbody>
</table>

Chi-square = 11.47  p = .05  df = 1  Yule's Q = -.65

Table 37: Gambling Propensity by Church Attendance, Lower Class, Free Churches

<table>
<thead>
<tr>
<th>Gambling Propensity</th>
<th>Church Attendance</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attend</td>
<td>Do Not Attend</td>
</tr>
<tr>
<td>Gamble</td>
<td>10</td>
<td>234</td>
</tr>
<tr>
<td>Do Not Gamble</td>
<td>11</td>
<td>150</td>
</tr>
<tr>
<td>Column Totals</td>
<td>21</td>
<td>384</td>
</tr>
</tbody>
</table>

Chi-square = 1.41  p = .05  df = 1
The above results are mixed with respect to statistical significance, yet all results indicate a lack of support for the extrapolated Durkheimian position. Tables 34 and 36, i.e., both upper and middle class tables, show statistically significant results in the direction opposite to the hypothesized result, at the .05 level of significance. Respective Yule's Q's of -.43 and -.65 augment these significance tests by showing fairly strong negative associations between churchgoer status and propensity to gamble for the upper and middle classes. Tables 35 and 37 do not indicate a statistically significant relationship between church attendance and propensity to gamble at the .05 significance level. Thus, for both lower class groupings, no test of association was performed.

In the two tables in which significance was not found, it may be noted that direction of result was opposite that hypothesized. The free churches grouping, especially, indicated a rather clear difference in this regard (table 37), with 61% of nonchurchgoers gamblers as opposed to only 48% of churchgoers.

Gambling Volume

Only one hypothesis on Swedish gambling volume was deemed appropriate to test Durkheim's integration conceptualization. It is listed below.
7. Gamblers will spend more money on wagers as a proportion of yearly income if they have relatively higher incomes.

As with the American data, the gambling volume hypothesis for Sweden parallels the corresponding one generated for the output of gambling propensity. The reasoning here, to reiterate, is that higher income implies greater integration within the society, with concomitantly greater social activity, i.e., greater dollar volume expended on gambling ventures. A chi-square test of independence was used to analyze the findings. The results are given below in table 38:

7The data in table 38 are interpolated based on Tec's findings, the only data to be altered in any way from her presentation. This alteration was a standardization of money wagered on gambling based on income. The actual procedure was fairly involved and is dealt with in the appendix. The transformation from an absolute mean weekly wager of two kr. per week for Swedish bettors to a .01 percentage of total income as established earlier (see page thirty-two) had the effect of completely reversing Tec's results, shifting many "low" volume bettors from the lower income group into the higher volume category and a great many "high" volume bettors in the high income group into the lower volume category.
Table 38: Volume of Money Spent by Gamblers as a Proportion of Yearly Income by Income Bracket

<table>
<thead>
<tr>
<th>Gambling Volume</th>
<th>Yearly Income</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Up to 6000 kr.</td>
<td>Over 6000 kr.</td>
<td>Totals</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>15</td>
<td>224</td>
<td>239</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>39</td>
<td>64</td>
<td>103</td>
<td></td>
</tr>
<tr>
<td>Column Totals</td>
<td>54</td>
<td>288</td>
<td>342</td>
<td></td>
</tr>
</tbody>
</table>

Chi-square = 54.03  p = .05  df = 1  Yule's Q = -.80

As seen in the results above, a statistically significant relationship obtains between income level and proportion of yearly income spent on gambling at the .05 level of significance. The relationship, however, is in the opposite direction from that hypothesized. Thus, Durkheim, or at least his extrapolated viewpoint, again fails to receive empirical support from the Swedish data. In this instance, in fact, his predictions are refuted. Interestingly, Tec's study shows that an unstandarized analysis leads in this case to a very different conclusion (see fn. 7 on previous page). The Yule's Q test yielded a measure of -.80, which indicates that the observed relationship is quite strong.
PART III CONCLUSION

CHAPTER IV: CONCLUSION
CHAPTER IV

CONCLUSION

A Preliminary Assessment

The overall picture of the findings indicates a mixed set of results for the American data and uniformly discouraging findings for the Swedish data. In the case of United States gambling patterns, Durkheim's integration theory as extended in this monograph finds at least partial support, i.e., statistical significance or a minimally strong beta weight with predicted directionality, in five of eight hypotheses. Additionally, one may note that in each of the three hypotheses which did not yield support for Durkheim, all indicated patterns in the predicted direction for as many levels of relationship as were tested in the particular hypothesis.¹

In the case of the Swedish findings, all seven of the tested hypotheses fail to lend support for the Durkheimian position. Specifically, four of the hypotheses showed no statistical significance in relationships, while two others showed a statistically significant relationship

¹It so happens that each of the three non-supporting hypotheses were tested by significance tests, hence lack of support for these three is defined as lack of statistical significance.
in the direction opposite that predicted by my adaptation of Durkheim's theory. A final hypothesis yielded both non-significant results and results significant in the unpredicted direction at the different levels at which its relationship was tested. Of the four non-significance findings, three hypotheses gave evidence in at least one level of test that results were in the predicted direction as posited by Durkheim's theory, although below the minimum value required for significance.

To review in greater detail, the American findings reveal the following configuration: comparison-oriented hypotheses yielding partial support (i.e., those using exclusively significance tests and gammas or Yule's Q's) for Durkheim's theory were two in number. These are listed below:

H 3. Controlling for religion, men will gamble proportionately more than women, where a childless marriage is involved (support for non Catholics,\(^2\) not for Catholics).

H 6. Controlling for religion, women will spend proportionately more of their total incomes than men on gambling activities, where a large family is involved (support for Catholics, not for non Catholics).

One comparison-oriented hypothesis yielded full

\(^2\)Statistical significance at the .05 level of probability.
support, i.e., support for all levels of test. This was hypothesis five:

H 5. Married Catholics with large families will spend more money on gambling activities as a proportion of their gross incomes than their counterparts.

One hypothesis in a concomitant variation format yielded partial support for Durkheim. The hypothesis is listed below:

H 4. As gross income and occupational standing increase, but educational level and age decrease, propensity to gamble among individuals will increase. (gross income, occupation of head of household, age, and occupation of respondent when partialled all vary in the predicted direction; educational level does not lend support for the Durkheimian position).

The other concomitant variation hypothesis, when partialling techniques were applied to the occupation of respondent variable, yielded full support for the Durkheimian theory, albeit with varying strength by variable. All variables varied in the direction posited by Durkheim:

H 8. As gross income and occupational standing increase, but educational level and age decrease, volume of money spent on gambling activities as a proportion of gross income will increase.

For the Swedish data, results are so uniformly contrary to prediction that one is limited to singling out hypotheses
which lie in the predicted direction while not reaching statistical significance. All Swedish hypotheses are of the comparison-oriented type. The three hypotheses which lie in the predicted direction in at least one level of test of the relationship are:

H 3. Gamblers will be drawn proportionately more often from lower educational levels, with class controlled (support for upper and middle class category, not for lower class).

H 4. Gamblers will be drawn in proportionately greater numbers from higher income groups, with class controlled (support for the lower class, not for the upper and middle class category).

H 5. Gamblers will tend to belong to voluntary associations more than non gamblers, controlling for class (support for the lower class, not for the upper and middle class category).

Significance of Methodological Factors

Methodological factors are of crucial importance to the monograph in two ways: in issues which affect both data sets, U.S. and Swedish, and in matters which distinguish the two in terms of validity and scope. The former issues serve mainly as cautionary reminders of the limitations of the study as a whole and of the unwarranted nature of any final, nontentative conclusions. The latter issues are of importance methodologically in pointing to a possible
explanation for anomalous results above and beyond any theoretical shortcomings.

In light of the rather mixed results as indicated above it seems most logical to attempt to deal with the issue of comparative validity and scope first. The former issue will be taken up later in this chapter.

A number of methodological factors mitigate the poor showing of the integration framework with respect to the Swedish data. With respect to validity, one flaw is most apparent. The Swedish data contain few variables used as integration indices by Durkheim, answering in general to only one of the three areas used by him as bases for an index (the family, religion and politics). The American data, conversely, considers two of the three. Further, treatment of the one area, religion, is tangential in terms of the Catholic-Protestant distinction so basic to Durkheim’s integration model. Further, and more basic, all four measures used in the Swedish data as useful tests of integration, but not used at all in Suicide, failed to support Durkheim. These were expressed interest in friends, membership in voluntary associations, religious attendance and yearly income. While it is true that none of the

3The income variable may actually support Durkheim, at least with respect to the propensity outcome. This will shortly be discussed. If so, this would be consistent with results in the American data. Yearly income is the only newly used variable in both data sets.
variables from the Swedish data operated clearly as predicted, one may note that only one Swedish variable was a direct carry over from its use in Suicide (education). Conversely all five of the variables used in the American data as carry overs from their use in Suicide worked at least partially as predicted. It is conceivable, then, that failure lies in the selection of variables and not in the integration theory.

With respect to scope of results, three shortcomings present themselves. These are scope of sample, variable manipulability, and scope of definition of gambling. First it is necessary to make the point that the boundary between validity and scope is often hazy. With respect to sampling differences, the Swedish data, through factors beyond Tec's own control, is limited in scope. As the Swedish Institute of Public Opinion only asked questions on gambling activity of males and only in an age range from 18-55, the ability to generalize to the Swedish population as a whole suffers considerably. One can but observe the comparative inferiority on noting that the American data set was selected to mirror the adult civilian population. Indeed, part of the inability to adequately apply variables of the integration theory to Sweden is due to the limited range of the sample. This is especially true with regards to the sex variable. Also, addition of women and a wider age range at the upper end
perhaps would alter findings, if behavior differences
associated with sex and age extend to gambling behavior.

Secondly, the Swedish data is limited in scope of
variable manipulability. This inflexibility takes two forms:
multivariate combinations allowed and operational defini-
tions. The nature of the tertiary analysis, i.e., limi-
tation to working with final tables rather than raw data
caused both forms of inflexibility. First, variable
selection limitations notwithstanding, the variables that
were available were combined in ways most amenable to testing
Tec's particular theoretical framework. These combinations
were made understandably without awareness of importance of
certain variables in influencing bivariate relationships of
other variables, according to a Durkheimian framework. Thus,
no opportunity to properly test Durkheimian predictions
existed for this data set. In particular, a variable avail-
able in the data set and ostensibly of importance as a
control variable, education, was not used as a control at
all, although class was often so used (four times).

The second form of hypothesis inflexibility is con-
cerned not with what kinds of questions may be asked but
with ability to select operational definitions for the
variables. Although this problem was pandemic in that all
but two hypotheses could have reasonably had different
operational definitions,\textsuperscript{4} discussion will be limited to hypothesis four. The outcome of this hypothesis, which deals with the relation between income and gambling propensity, reversed itself on reclassification of categories. The lower class partial changed from merely lying in the predicted direction to doing so with statistical significance, and the upper and middle class partial changed from inconclusiveness to arrayal in the predicted direction.

The significance of this discovery is that the improvement in terms of Durkheim's theory, including achievement of the only supporting directionality at a statistically significant level for the Swedish data, is due to selection of operational definitions of greater validity for the integration framework than Tec's own (see page one hundred, fn; also, more specifics will be discussed later in this chapter). The methodological impact is that in at least one case, hypothesis seven, measurement of the effect of such changes was not possible due to the availability only of final tables and not raw data. This lack may have been influential in the negative outcome of this hypothesis.\textsuperscript{5}

The final limitation peculiar to the Swedish data is

\textsuperscript{4}The two are membership in voluntary associations and church attendance.

\textsuperscript{5}Ironically, a reoperationalementization was done for the dependent variable of this hypothesis which reversed the results from favorable to disfavorable. The change was the standardization of gambling outlay to proportion of yearly income.
the limitation of gambling activity to wagers on the outcomes of soccer matches. It is never made entirely clear whether this is Tec's own choice or a choice made by the polling institute (Tec; 1964;:3). However, this is immaterial to the reduction of validity very likely caused by the narrow scope of the definition. By contrast, one may compare the range of activities incorporated within the framework of gambling in the American data. No fewer than eleven specific forms are included. It is a moot point whether gambling behavior is a unified social activity, but surely the exclusion of all but one form of gambling can do little to achieve a representative picture of its nature in toto.

Finally, two shortcomings of the Swedish data set, potentially grouped with the ones above, will be discussed. These two, unlike the others, do not seem potentially involved in the poor showing of the Durkheimian perspective. The first is the relative lack of emphasis on gambling volume as opposed to propensity. As may be noted, only one hypothesis in the Swedish set deals with volume, while four in the U.S. data do so. There is a possibility that had some propensity hypotheses been replaced with volume hypotheses, the overall results would have been different. However, this does not alter the fact that gambling propensity

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6For a complete list, see the coding manual (Appendix A) at the end of the monograph.
is a valid index of gambling behavior. It does not explain why the extant Swedish findings conform less than the American findings to Durkheim's predictions.

The second shortcoming, related to scope, is the lack of explanation for the variation in sample size Tec has throughout various tables. This criticism cannot be gainsaid but it is nonetheless irrelevant in mitigating the particular showing of the Swedish data, because the American tables also have variations in Ns. Presumably some threat to external validity could be involved in both sets of findings. In the Swedish data, this variability was presumably due to selectivity of response by members of the sample, based on such factors as applicability of the question (such as questions pertinent only to married men or only to gamblers). Factors of this type do not affect external validity, as the reduction in sample size does not indicate a reduction in the scope of responses from the relevant segment of the population, but merely a reduction in the size of the population.

Variability in the American findings is due first of all to factors of applicability of values of the variable, which is parallel to the applicability of question factor in the Swedish data. Secondly, variability here is due to the effect of partialling. An example of the former factor would be applicability of various cases to a table depending on whether the hypothesis involved families with or without
children. As for the latter, this would be exemplified by controlling for a variable such as religion. These two factors do not threaten external validity; the first because lesser table size reflects but a smaller population, the second because the attendant generalizability problem, a minimum number of cases to conduct the significance tests, has been met.\textsuperscript{7}

In summary, external validity in the two data sets is seemingly unaffected by the varying table Ns. In the U.S. data, adequate numbers of cases were available to conduct significance tests without a need for oversampling. Both sets had variations due merely to question or variable validity, which doesn't affect external validity. Finally, it is possible that some variations in table sizes in both sets were caused by systematically distributed nonresponses. To the extent these problems existed in both sets, one could not use it to explain the unanticipated outcome of the Swedish findings.

\textbf{A Reassessment of the Findings}

Despite ample evidence that methodological changes might bring about at least a partial vindication of Durkeheimian integration theory, there is considerable doubt that the integration approach would be fully supported

\textsuperscript{7}As for the measures of association, generalizability is assured based on inclusion of any statistically significant Betas.
even with ideal methodological conditions. Thus, one is forced to examine complementary or competing theoretical approaches. Prior to so doing, however, a closer look at the findings reveals some interesting consistencies which force reinterpretation of the implication of the outcome of the Swedish findings for the Durkheimian approach.

Four hypotheses used in each study share identical variables. It is with these that one can most reliably assess the generality of the Durkheimian approach in terms of application to both data sets. Three of these hypotheses involve apparent inconsistencies in applicability, receiving support from the American data but not from the Swedish data. A fourth mutual hypothesis does have prima facie consistency, at the very least not offering support to Durkheim for either data set. The inconsistencies prima facie will be examined first.

First are the hypotheses dealing with occupational class and propensity to gamble. These encompass hypothesis four for the U.S. group (see pages forty-one or fifty-five), and hypothesis two from the Swedish group, (pages forty-two or ninety-two). With respect to occupation of head of household, the U.S. data found the expected positive relationship (beta .09) while the Swedish evidence refuted

8 This refers to cases where both independent and dependent variables are identical.
Durkheim (see page ninety-five). No disparity exists, however, between the unpartialled American relationship for occupation of respondent and propensity to gamble (beta and the Swedish finding. The argument advanced here is simply that unless elaboration can be applied to the Swedish data, one may justifiably conclude that the negative relationship between occupation (class) and gambling propensity is a function of masking by the age variable.

Second and third are the sets of hypotheses dealing with the relation between income level and gambling behavior. The U.S. hypotheses of interest here are four and eight (pages forty-one and forty-two) and the Swedish counterparts are numbers four and seven (see page forty-three). For the propensity hypothesis, the American results show a strong positive relationship as predicted (beta .12), whereas the Swedish findings failed to show statistical support for the Durkheimian view for either upper and middle or lower class (pages ninety-nine and one hundred). As stated at some length earlier in this chapter (see page one hundred sixteen) when operational definitions of income level are changed, the findings in the Swedish data become consistent with the American data and more consonant with Durkheim.

As for the volume hypothesis, the American results support the Durkheimian position with a positive relationship while the Swedish finding refuted the Durkheimian position (see page one hundred seven). Here one may note that
while the inconsistency cannot be argued away, the level of support for the American data has precipitously fallen, and at such a low level (beta .01) the comparative findings are not entirely inconsistent, although they do not particularly favor a Durkheimian framework.

Finally, a fourth mutual hypothesis generated apparently unqualifiedly consistent findings concerning education and gambling propensity. The pertinent hypotheses are number four for the U.S. (see page forty-one) and number three of the Swedish group (see page forty-three)

In the U.S. results, findings either fail to support or else refute the Durkheimian position. The regression of education on gambling propensity produced a value too small to contribute to the regression equation (see page sixty-four). Secondly, an elaboration showed that when education is partialled by religion, an explicitly positive relationship between education level and gambling propensity is indicated for each level (page seventy-three). Thus, the regression fails to support Durkheim while the elaboration refutes a Durkheimian framework.

In the Swedish data, one finds Durkheim failing to gain statistical support from either the upper and middle class grouping or the lower class groupings (pages ninety-seven and ninety-eight). Thus, the results are in line with the American findings.

In sum, the overall picture is one of unexpectedly
consistent comparative findings despite the apparently uniformly anomalous Swedish results. The implication of the comparison of the four mutually rendered hypotheses is that the Durkheimian framework can be feasibly applied to both societies. Of course, its overall explanatory power is limited, but the important point is that the limitations are consistent, as I have attempted to show. The consideration of alternative approaches, then, will be aimed at attempting to offer superior explanations for the variables whose behavior Durkheim does not explain.

Before turning to alternative theoretical approaches, a final word is necessary regarding the hypotheses which are peculiar to Sweden. The point is that while the three do not support the Durkheimian position, one cannot call this proof of inconsistency. Obviously, the reason is that such a judgment could only be safely made where the hypotheses use identical variables as the American ones use. This is not to deny, of course, that all indicators attempt to measure the same concept, integration, and that valid indicators should thus yield consistent results across data sets. However, one cannot attribute inconsistencies to different social behavior patterns as readily as one might if the hypotheses were perfectly identical. No parallel

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9While not reaching statistical significance, the relationship between membership in voluntary associations and propensity to gamble did lie in the predicted direction for the lower class grouping in the Swedish data.
American hypotheses exist which probe the phenomena of voluntary association membership, degree of interest in friends, and orientation toward attending church as they pertain to propensity to gamble. Had such areas been examined, it would have been possible to examine additional areas for consistency of results across societies.

In sum then, two things are being said: use of identical variables in the American data might produce results consistent with the Swedish findings; or else, such use might produce such results but in a way showing how changes in certain factors would make both sets of results consistent with Durkheim and thus each other. For an example of the latter, see the fourth hypothesis of the Swedish study (page one hundred twenty-one).

Alternative Theoretical Avenues

As earlier stated, alternative theoretical approaches would be aimed at offering superior explanations for variable relationships where these relationships were not empirically consistent with the Durkheimian hypotheses. The procedure will be simple: the hypotheses from either data set which failed to generate statistical support as defined earlier, either statistical significance or a minimally strong beta weight with predicted directionality, will be scrutinized for theoretical adequacy.
First, to the American hypotheses. The first of these, listed by number, is the following:

1. Married Catholics with large families will gamble proportionately more than their counterparts, i.e., opposites.

Due to the singular nature of Durkheim's integration theory, there is, despite failure of statistical support, no alternative theoretical explanation on the horizon for this hypothesis. It is simply that no other social macrotheory deals with the above configuration of variables. In such a case, an alternative would be to throw out the integration variables in the hypothesis as simply being nonpredictive of gambling behavior and search for other variables. A second alternative would be to declare Durkheim's variables the reigning ones by default. The inclination here is toward the latter alternative, keeping in mind their shortcomings. This is for two reasons. First, while not statistically significant, these hypotheses did lie in the predicted direction. Second, the companion hypothesis for volume unequivocally supports the Durkheimian position (see page one hundred eleven), indicating that there very likely is connection with the variables in question and gambling behavior. Thus, in the absence of any competing theory and with support from other hypotheses, one is loath to abandon hypothesis one.

The next two hypotheses\(^\text{10}\) parallel the first one in a

\(^{10}\text{Technically, partially supported hypotheses three and }\)
number of respects. While different, the variables within these hypotheses also form a unique configuration, and one for which support exists in other contexts. Further, it will be seen that the pair of hypotheses dealing with the variables expressed is difficult to disentangle by supported and non-supported propositions.

2. Controlling for religion, women will benefit more, i.e., gamble proportionately more than men where a large family is involved.

7. Controlling for religion, men will spend more money on gambling activities as a proportion of their gross incomes than women, in those cases where a childless marriage is involved.

In both cases, which are really alternative sides of a single coin, a variable is presented which is unconsidered in non-integration theories. This is the variable of family size. It had not previously been used in any macrotheory as a cause of social behavior; thus no alternative predictions of its impact are available. The failure of the above "family size" hypotheses could lead to discarding them as unrelated to gambling behavior. However, as in the six for Catholics and non-Catholics respectively should also be included here. They are not for two reasons. First, they deal with the same issue, family size, and thus share the same disposition as the hypotheses which are discussed. Secondly, no pattern of either gender status on gambling outcome was evident separating the levels of hypotheses which were supported from the levels which were not, or from the hypotheses receiving no support whatever.
first hypothesis, circumstances do not dictate this course of action. First, there is the fact that both hypotheses yielded results which, while not statistically significant, lay in the predicted direction. This seems particularly important evidence for retention of the family size variable in light of a lack of any other explanation for a reversal in gender gambling rates.

Secondly, the family size variable is tested and receives partial support in hypotheses three and six (see page one hundred ten). Finally, there was no clear indication of a pattern which would limit the scope of the variables. That is, results do not show consistent limiting conditions. For example, among all the hypotheses dealing with family size one with each family size gains support; also the ability to link the validated ones with type of outcome—propensity or volume—is undercut by the inconsistent pattern of level of the religious variable with which support obtains. That is, in each validated case linking a sex and family size with a specific output, a different religious category provides the cases. The upshot is that one must retain the Durkheimian view as a possibility for all contexts which it considers—for both sexes and both outputs—in the matter of family size and integration.

As in the above set, hypothesis four contains a case of partial support, with all variables except education behaving according to Durkheim's predictions. As with
hypotheses three and six, the education variable is an issue elsewhere, (in the upcoming perusal of Swedish hypotheses) and similarly will be covered within a context of a totally non-supporting hypothesis.

Swedish Hypotheses

Turning to the Swedish hypotheses, one notes first that the list is longer. Instead of three hypotheses as with the American data, five need to be considered. The first of these, again listed by number, follows below:

1. Gamblers will tend to express a higher degree of interest in friends than will non-gamblers.

Here as with the American hypotheses in the preceding section, no relevant social theory connected specifically to gambling behavior or not, seem available to act as a foil for a Durkheimian approach. Perhaps the lack of statistical support should not be interpreted negatively in relation to Durkheim's theory. For as Tec points out, (1964k:17-19) the lack of difference between gamblers and nongamblers with respect to interest in friends does imply that gambling is not necessarily harmful to society. Thus Tec seems to depart from her essentially sociology of deviance position in this respect. Finally, it may be that gambling, as but one measure of social activity, is simply insufficient to predict to a higher degree of social integration, which interest in friends is designed to measure.
5. Gamblers will tend to belong to voluntary associations more than nongamblers, controlling for class.

Here one would perhaps be tempted to use a social class approach because of the availability of alternative theories with competing predictions on social class and behavior, and because substantial literature exists on the relationship between voluntary association membership and social class (see for example, Lowry and Rankin, 1969a:313-314; and Popenoe, 1971a:185). However, such a route is not available because social class is controlled in the test of this hypothesis, and thus the lack of differences between members and non-members cannot be due to an inadvertent neutralization by a differential social class membership in these two categories. Consideration of potentially intervening variables other than class is more speculative, because no comparable body of data is available relating these to membership in voluntary associations.

However, it is interesting to note that income level, a variable shown to directly vary with gambling propensity for the Swedish data (see page one hundred), is often associated with class membership. Thus, assuming that as membership levels decrease so does income, one could possibly adopt a Mertonian perspective to explain the outcome. That is, one could speculate that non association members contained similar levels of gamblers as did members because individuals not belonging to associations had lower incomes,
and people with lower income would be more likely to turn to activities like gambling to improve their lot in society.

6. Active churchgoers will tend to be gamblers more than nonchurchgoers, controlling for class and type of church.

Theoretical evidence exists to perhaps explain the results of this hypothesis, and in such a way as to bring the anomalous findings actually in line with a Durkheimian approach. The theoretical alternative to Durkheim here is Glock and Stark's deprivation theory of religion (Lowry and Rankin, 1969b:286-292). This theory holds that people who are the most socially deprived, i.e., of a lower social status, will be the most actively involved in the church. This is posited because religion is seen as providing gratification which the society at large fails to provide (Lowry and Rankin, 1969c:289). Social deprivation is measured by many of the same indicators used by Durkheim to measure integration, and the two can be considered roughly synonymous with each other. Thus, in terms of Durkheim's approach, the theory would hold that churchgoers, as the least integrated individuals (at least initially), would be least likely to be gamblers. This happens to be more consistent with the Swedish results than Durkheim (see especially

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11. These include sex, age, marital status, number of children and social class. These all were consistent in operational definition with the variables in this study.
tables 34 and 36). The important point is that this theory does not fundamentally oppose the integration theory; it differs not on the effect of integration on social behavior but on the integration status of active participants in the church.

7. Gamblers will spend more money on wagers as a proportion of yearly income if they have relatively higher incomes.

One can perhaps simplistically say that two theoretical schools of thought exist with regard to income level and gambling behavior. The former says that gamblers will come primarily from higher income groups and the latter that gamblers would issue predominantly from lower income groups. These positions also hold for volume of money spent on gambling as a proportion of income; the higher one's income the more money (or less) one will spend on gambling as a proportion of income. The results for this hypothesis conclusively support the second position.

Aside from Durkheim, Veblen would seem to belong to what we might call the Durkheimian school, which equates higher income with greater gambling activity.\(^{12}\) Veblen considered gambling important to upper class individuals because it related closely to two activities central in

\(^{12}\)It must be emphasized that the term "school" is used advisedly and refers only to prediction of pattern and not necessarily to theoretical formulation.
his formulation of upper, or leisure class\textsuperscript{13} behavior: conspicuous consumption and maintenance of a certain lifestyle. Leisure class individuals are expected to consume goods in excess of a minimum for subsistence as well as high in quality in order to achieve reputability. Further, this consumption must be conspicuous so as to put one's opulence in evidence of others (Veblen, 1967b:73-75). Gambling, with its high use of no return on investment and its public nature is an ideal avenue for the conspicuous consumption expected of the upper or leisure class individual. Further, Veblen noted that a major characteristic of the less wealthy of the leisure classes is the use of an expensive front for appearances. Gambling, with its lure of quick riches, is a promising avenue for having the wherewithal to support an extravagant life style demanded of the upper or leisure class individual.

The school equating lower income to greater gambling activity, which could arbitrarily be called the Mertonian school, has numerous members. As it is the pattern predicted by this school which is empirically supported, the theoretical approaches taken by its members must be given somewhat greater attention. Each of these may contribute

\textsuperscript{13}Despite the popularity and desirability traditionally of upper class values of a society for members of the entire society, the leisure class is by definition limited to those of substantial means, i.e., pecuniary ability to afford a life of idleness (Veblen, 1967a:Chapter 3).
individually toward explanation of the observed pattern. The first view is that of Merton. His argument is that lower class individuals, in belonging to a segment of society without the culturally approved means to achieving success, i.e., mobility upward, will be the most likely to turn to deviant activity to achieve their goals, such as gambling. This argument presumably applies as well to those with lower incomes.

A second view within the Mertonian camp is the view of Tec, which has been discussed earlier in this monograph (see chapter one, page twenty). Tec's position does not use Merton's labels, i.e., anomie theory, but the two otherwise are virtually identical. She states that the key to the relationship between class and gambling is accessibility of conventional channels of social mobility (Tec, 1964:67). Groups without access to channels of mobility for achievement of a status level to which they aspire will be the most likely to turn to unconventional but available channels. This position parallels Merton's as can be seen. Even Tec's point about comparison of achievement levels as an aspiration

14Deviant is used here in a broad sense, referring to any non-institutionalized means to achieving cultural goals.

15This of course assumes that they will feel equal pressure to succeed as those who do have access to culturally approved means.

16It is perhaps necessary to repeat that Tec's own viewpoint issues from the same data which serve as the basis for the Swedish section of this monograph.
builder (Tec, 1964n:67) parallels Merton's work on reference group theory.

As though quoting Merton on relative deprivation, Tec says at one point that the upper-lower class will encounter more obstacles for mobility aspirations than the lower-lower class because of their higher aspirations, irrespective of their "absolute" superiority in qualifying for upward mobility (Tec, 1964n:66).

Finally, Tec predicts (1964o:61) "the lower the class, the . . . greater the likelihood of gambling" for reasons just mentioned. The only departure from Merton is that her assessment of distribution of perceived obstacles by class leads her to predict greatest gambling activity by the societal stratum not at the very bottom. This qualification almost seems to integrate a Durkheimian with a Mertonian position, focusing on a deprived stratum but one not so deprived as to have renounced high aspirations.

A third position within the Mertonian school is that of Devereaux. Devereaux's 1950 study (see chapter one, pages twenty and twenty-one) notes that the propensity to gamble among lower class Americans is greater than that of the middle class. His explanation is cultural in emphasis rather than structural. He believes lower class individuals gamble more than middle class individuals because they have not absorbed as completely a puritan ethic, which greatly delimits the avenues for acquiring, as well as the use of, money.
Two other members of the Mertonian school who basically share a perspective different from any fellow member discussed thus far are Marx and Quinney. They suggest what appears to be a combination conflict and sociology of knowledge approach applicable to the consideration of income or class and gambling patterns. The Marxist position would, most simply put, point out that lower income or lower class people would gamble more largely because the dominant sectors of the society, i.e., the non-lower class, chooses to label lower class behavior as gambling. According to the Marxist position, this hypocrisy is grounded on the fact that while all classes gamble, only more privileged class can typically afford culturally approved forms of gambling such as lotteries. Privileged classes call these events "wagering" and reserve legal harrassment and the more odious label of gambling for lower class gambling activities such as numbers (see Zola, 1974a:61). The difference is not merely one of labels, however, but serves to preserve upper and middle class immunity from laws which make gambling illegal.

Quinney, taking a conflict position with reference to the law, notes that law is a result of the operation of interests and is seldom a product of the whole society. As such, it supports some interests at the expense of others. This position is an extension of Quinney's general view of society as characterized by conflict and coercion and not consensus and stability (1970a:35). Thus, Quinney
supplements the Marxian contention that, through labeling techniques, privileged sectors of society have restricted gambling to the lower class. This of course works to the advantage of the upper and middle classes. One could say that differential perception or labeling of gambling activity is a device allowing manipulation of the legal system to the advantage of particular class interests.\textsuperscript{17} Borrowing from Devereaux, this manipulation pays homage to middle class norms against gambling by sanctioning it while at the same time allowing the privileged sectors of society to gamble legally. The differential perception or labeling also take care to uphold the value of equality before the law.

3. Gamblers will be drawn proportionately more often from lower educational levels, with class controlled.

For Sweden, an overwhelmingly (over 98 percent) Protestant society (Tomasson, 1970b:72,75), differences in degree of integration could reasonably be expected to only minimally arise from religious differences or factors associated with religious differences. As education is such a factor (see page seventy), one would not be as readily able to predict the same directionality of relationship between education and gambling for Sweden as in a society

\textsuperscript{17}The question of whether the label precedes the perception or the reverse has potential bearing on the sincerity or deceit involved and is interesting phenomenologically. However, either way, the impact of class position on definition of gambling is overriding.
where a more substantial proportion of the population is Catholic. Thus, barring an alternative theoretical stance which supplies a rationale for predicting a particular relationship between education and gambling propensity, it is understandable that a statistically significant relationship does not exist in Sweden. Educational differences here simply do not seem to reflect compensation for lack of religious integration.

It is conceivable, at least, that one could look at education from a Veblenian standpoint to understand these results. That is, where Veblen and Durkheim can both be viewed as positing a direct relationship between most class-related variables such as income and gambling orientation, only Veblen would likely posit such a relationship for the education variable, arguing that higher education by in large reflects the leisure class culture prevalent among the upper classes (1967c:369).

The United States data for gambling propensity reveals continuation of this pattern. Religion and education are simply not connected to the extent Durkheim would have predicted. Whether religion is allowed to vary or not, education has at the best\(^\text{18}\) (in terms of accuracy of Durkheim) an insignificant impact on gambling propensity. Here, one

\(^{18}\)It will be recalled that partialling by religion resulted in gambling propensity increasing as education increased (page seventy-three).
cannot use lack of Catholics as an excuse for the outcome: the U.S. has a substantial (22 percent) Catholic population (De Fleur et al., 1971a:554). Unless one opts for a more commonsense view of integration, i.e., that one is more integrated as he attains higher education, one perhaps must rely on the support this hypothesis gained when tested for gambling volume and not propensity (see page eighty). A key need seems to be the isolating of higher level of education from other variables related to class but which are associated with higher integration, such as high income.

**Implications for Extension of Durkheim's Theory**

Results from both data sets indicate that, with guarded optimism, one can say Durkheim's integration theory, as tested against gambling behavior, has empirical applicability to forms of social behavior other than suicide or mortality; that is, Durkheim's theory has a generality which Durkheim undoubtedly intended. It seems reasonable to assume that in using suicide rates as a vehicle to demonstrate the force of societal cohesion on individuals, Durkheim was interested in cohesiveness as a general property. Thus, the intention would seemingly be to use the societal variable as a basis for explaining various types of social behavior.

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19 The generality specifically refers to a highly abstract interpretation of egoism in which loathness to act ramifies to various types of social behavior including gambling, and not simply to acts more concretely symbolizing withdrawal from society, such as suicide.
However, it must be quickly added that the results are too inconclusive to claim that Durkheim's framework can be viewed as fully supported or even readily applicable to a wide spectrum of social behaviors. Any such conclusion would be vastly premature pending refinement and further test of the range and scope of the integration theory.

With this caveat, and with the knowledge that other theories seem better equipped to explain certain results generated from the American and Swedish data, one further point regarding the generality of the theory seems in order. Due to the basic consistency of findings for the two societies one at least can tentatively reaffirm the cross-societal nature of the integration theory. At least with the two countries and time periods examined, one is not forced to reconcile contradictory findings across societies and to grapple with the difficult question of identifying conditions under which the theory holds. This problem conceivably could crop up with a more comprehensive cross-societal inquiry.

**Suggestions for Future Research**

A number of areas suggest themselves as possible lines of future inquiry. These run the gamut from shoring up weaknesses in the basic design to examination of subtypes of gambling activity, as suggested by an alternative theory to Durkheim's.
Any hope for improvement in this study must begin with consideration of the lack of a true experimental format. At the present stage of the research, it is not possible to declare with certainty that outcomes are due to the independent variables established by the theory. In fact, it is equally difficult to say whether unpredicted results are due to the irrelevance of the chosen independent variable or to operation of uncontrolled extraneous variables. The ex-post facto nature of the design throws a blanket of uncertainty on all results and underscores the need for interpretative caution.

Given the nonmanipulable quality of the independent variables, a worthwhile approach to buttressing confidence in the empirical causality of the hypotheses would be development of new independent variables. Imaginative indicators of integration, characterized by amenability to experimenter control and manipulation, could complement the realism of the variables which occur naturally in the social environment. Increased confidence in the validity of the original independent variables could be gained without sacrificing fidelity to the theory.

In the preliminary stages, a laboratory setting would probably be required, so as to bring the dependent variable, gambling behavior, automatically into play. This is because

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20 For ethical if not practical reasons.
the initial concern is to determine that some causal connection exists, and with the relatively weak intensity of independent variables in laboratory as opposed to field settings, (see Kerlinger, 1964a:380) existence of such a connection could best be determined in a structured situation. Once this is accomplished, one could begin to vary independent variables in unstructured settings, i.e., improve the external validity aspect of this more rigorous design.

A purely hypothetical example of experimental conditions might be the following: subjects are randomly selected and randomly assigned to task groups, one whose task requires competition and the other whose task requires cooperation among group members. The assumption would be that competition induces individuality and low group identification, while cooperation induces group cohesiveness. The task groups meet recurrently over a period of weeks to foster a basic psychological atmosphere which the subjects can come to anticipate, either isolation from the group or friendliness towards it. Then some mechanism is developed, ostensibly peripheral to the task activity, such as use of mailboxes for distribution of task instructions. These would be used covertly to introduce gambling stimuli. Subjects would occasionally receive general departmental or campus literature, often enough to make this appear routine and not so often as to alienate them. Among the general literature would be applications for a fictitious campus
lottery which subjects would deposit along with a small entry fee at some campus location. Insofar as the applications require identification, gamblers could be identified by task groups. The hypothesis would be that a preponderance of gamblers would come from the cohesive task group.

A second and related suggestion for improvement of this study pertains to improvement of control of extraneous variables within the ex-post facto field setting. Specifically, more care in recognizing interrelationships between independent variables is required before proper assessment of relationships of integration to gambling behavior can be made. This idea is less radical than the previous line of thought as it merely suggests optimization of the extant ex-post facto design in terms of control of extraneous variables, and not construction of a new design. However, it is necessary to caution that while such optimization would improve the study, it would not adequately test for causal relationships as would a true experimental design.

An example of such improvement would be the extension of the Hyman-Lazarsfeld elaboration technique in the partialling of education and gambling propensity for the U.S. data to variables such as income and occupation. Generally speaking, the concomitant variation hypotheses of the U.S.
data are faced with a multicollinearity potential between the independent variables which is inadequately explored as the study stands. In the particular example, such partialling could lead to results in line with the Durkheimian prediction that a higher level of education will lead to a lessened propensity to gamble.

Thirdly, future study of societal gambling behavior based on the comprehensive quantitative data at hand would profitably examine individually various types of gambling. This at least would be feasible for the American data set. This would be useful from a number of standpoints, but would be particularly so for exploring the validity of a Marxian alternative to the Durkheimian hypothesis of higher income leading to higher gambling volume in the Swedish case. That is, the Marxian view could draw support should analysis of various subtypes show that types of gambling defined as such by the middle and upper classes, e.g., numbers and craps, draw disproportionately from people of lower class backgrounds, while middle class forms of gambling such as lotteries and bingo draw proportionately fewer lower class individuals.

21 Correlation between independent variables tested individually against a dependent variable.

22 Among these would be that perhaps people behave more predictably at more concrete levels of behavior than at the abstract level of "gambler," another to search for and assess differential gambling activity in terms of type.
While such a finding would have little bearing on the American data from which it would be drawn, it would perhaps give some clue to the anomalous Swedish findings. In other words, one could conceivably explain a higher gambling volume among lower class individuals as a function of the limitation of the Swedish survey to football pools. With other forms of gambling tested to assure tapping gambling activities of all classes, the results might be different, provided one has empirical basis in the first place for assuming class differences in type of gambling pursued.

A fourth area for future research activity involves expansion of the cross-societal base of comparison. The scope of the inquiry should be extended to fit the inclusive theory of social behavior that Durkheim generated. One could initially examine countries for which societal data on gambling patterns is available, such as Great Britain (see, for example, the Report of the Royal Commission, 1951b, and Newman, 1972s). One criterion for country selection would be possession of identical or parallel variables to those used by Durkheim to tap integration, e.g., a minimum number of Protestants, Catholics and Jews. While desirable, however, this would not be a sine qua non for choice. This

23This is so first of all because the American data yielded support for the competing Durkheimian position for both outcomes, albeit somewhat tenuously for the volume output (beta .01). More important, however, is that the American survey does include various types of gambling activity, including types popular among each social class.
would be bound mainly by whether the indicator is a valid measure of the concept.

A natural next step, in light of concerns with both experimental design and an increased number of societies, is attainment of a truly comparative approach. As opposed to a multi-societal approach such as presented in this monograph, a comparative approach would foster testing for causal relationships through the superior experimental design format. Countries with varying values of integration variables would be tested for varying gambling outcomes, results of course hinging on comparability (see footnote, page twenty-five). This approach, while highly ambitious, would provide the optimal, i.e., societal level, experimental test of the integration theory.

A final area would consist of the search for new empirical domains with which to test the generality of the model. The effort need not be postponed until after gambling is exhausted as a substantive issue. As testing of the theory is perhaps the primary goal, simultaneous inquiries into various empirical areas is quite appropriate. Primary criteria for selection of new dependent variables would include catholicity of the behavior within the societies examined and ready availability of data, such as variables within data libraries like the Survey Research Center of the University of California.
APPENDIX
<table>
<thead>
<tr>
<th>Column</th>
<th>Variable</th>
<th>Codes and Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>I.D. No.</td>
<td>Area code and questionnaire no. from 0011</td>
</tr>
</tbody>
</table>
| 3-5    | State    | New England:  
|        |          | 11 = Maine  
|        |          | 12 = New Hampshire  
|        |          | 13 = Vermont  
|        |          | 14 = Massachusetts  
|        |          | 15 = Rhode Island  
|        |          | 16 = Connecticut  
|        |          | Middle Atlantic  
|        |          | 21 = New York  
|        |          | 22 = New Jersey  
|        |          | 23 = Pennsylvania  
|        |          | 24 = Maryland  
|        |          | 25 = Delaware  
|        |          | 26 = West Virginia  
|        |          | 27 = District of Columbia  
|        |          | East Central  
|        |          | 31 = Ohio  
|        |          | 32 = Michigan  
|        |          | 33 = Indiana  
|        |          | 34 = Illinois  
|        |          | West Central  
|        |          | 41 = Wisconsin  
|        |          | 42 = Minnesota  
|        |          | 43 = Iowa  
|        |          | 44 = Missouri  
|        |          | 45 = North Dakota  
|        |          | 46 = South Dakota  
|        |          | 47 = Nebraska  
|        |          | 48 = Kansas  
|        |          | South  
|        |          | 51 = Virginia  
|        |          | 52 = North Carolina  
|        |          | 53 = South Carolina  

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<table>
<thead>
<tr>
<th>Column</th>
<th>Variable</th>
<th>Codes and Explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-6</td>
<td>State</td>
<td>54 = Georgia 55 = Florida 56 = Kentucky 57 = Tennessee 58 = Alabama 59 = Mississippi</td>
</tr>
<tr>
<td></td>
<td></td>
<td>South</td>
</tr>
<tr>
<td></td>
<td></td>
<td>61 = Arkansas 62 = Louisiana 63 = Oklahoma 64 = Texas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rocky Mt.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>71 = Montana 72 = Arizona 73 = Colorado 74 = Idaho 75 = Wyoming</td>
</tr>
<tr>
<td></td>
<td></td>
<td>76 = Utah 77 = Nevada 78 = New Mexico</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pacific</td>
</tr>
<tr>
<td></td>
<td></td>
<td>81 = California 82 = Oregon 83 = Washington</td>
</tr>
<tr>
<td></td>
<td></td>
<td>84 = Hawaii 85 = Alaska</td>
</tr>
<tr>
<td>7</td>
<td>No. of persons over 21 in household</td>
<td>Code 0-9 Actual number. Ten or more = -, &amp; = undesignated</td>
</tr>
<tr>
<td>8</td>
<td>No. of household under 21 years</td>
<td>Code 0-9 actual number. - = ten or more; &amp; = none</td>
</tr>
<tr>
<td>9</td>
<td>Religious Preference</td>
<td>0 = Moive 1 = Protestant 2 = Roman Catholic 3 = Jewish</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = Eastern Orthodox 5 = Other 6 = None</td>
</tr>
<tr>
<td>10</td>
<td>Occupation of Head of Household</td>
<td>0 = Professional 2 = Business, Executive 3 = Clerical</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = Sales workers 1 = Farmers 8 = Farm laborers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 = Skilled workers 6 = Unskilled workers, operatives</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 = Service workers 8 = Non-labor Force 9 = Undesignated</td>
</tr>
<tr>
<td>Column</td>
<td>Variable</td>
<td>Codes &amp; Explanations</td>
</tr>
<tr>
<td>--------</td>
<td>--------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>11</td>
<td>Occupation of respondent</td>
<td>Code same as Col. 10</td>
</tr>
<tr>
<td>12</td>
<td>Family (gross) income</td>
<td>1 = Under $1,000 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = $1,000-$1,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = $2,000 to $2,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = $3,000-$3,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 = $4,000-$4,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 = $5,000-$5,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 = $6,000-$6,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 = $7,000-$7,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9 = $8,000-$8,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 = $9,000-$9,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 = $10,000-$10,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 = $11,000-$11,999 a year</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13 = $12,000 or more</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14 = Undesignated</td>
</tr>
<tr>
<td>13</td>
<td>Marital Status</td>
<td>1 = Married</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = Single</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = Widowed/divorced</td>
</tr>
<tr>
<td>14</td>
<td>Education</td>
<td>1 = None of grades 1-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = Grades 5, 6, 7</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = Grade 8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = High school, incomplete</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 = High school, graduate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 = Technical, Trade or business</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 = College, University, incomplete</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8 = College, University graduate</td>
</tr>
<tr>
<td>15-16</td>
<td>Age</td>
<td>Actual age is coded in double digits 99 = 99 or more</td>
</tr>
<tr>
<td></td>
<td></td>
<td>00 = Undesignated</td>
</tr>
<tr>
<td>17</td>
<td>Sex and Race</td>
<td>1 = White man</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = Negro man</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 = Other man</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = White woman</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = Negro woman</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 = Other woman</td>
</tr>
<tr>
<td>18</td>
<td>Size of Community</td>
<td>1 = Farm resident</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 = Open country, non-farm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 = Places under 2,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4 = 2,500-4,999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 = 5,000-9,999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6 = 10,000-14,999</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7 = 15,000 or more</td>
</tr>
<tr>
<td>Column</td>
<td>Variable</td>
<td>Code &amp; Explanation</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| 18 cont'd | Size of community               | 8 = 50,000-99,999 and suburbs  
9 = 100,000-249,000 and suburbs  
0 = 250,000-499,999 and suburbs  
- = 500,000-999,999 and suburbs  
£ = 1,000,000 and over and suburbs |
| 19   | Fringe Areas                     | If column 18 is 1-7, column 19 = 1  
If column 18 is 8-£, column 19 = 2  
1 = central city  
2 = suburbs |
| 20 | S/MEA Residence                  | S/MEA 1= respondent resides in Standard Metropolitan Statistical area  
2 = Not in S/MEA |
Column Guides & Codes

Question 11 (Hand Respondent Card) On this card are listed a number of ways in which people bet money. Sometimes people bet with members of their family or with friends, at charitable or religious organizations, at facilities operated and licensed by the state, and sometimes at professional or commercial facilities that are not licensed.

Thinking in terms of the past four weeks, would you read off the letter that best describes how, if at all, you have bet on:

<table>
<thead>
<tr>
<th>Column</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Don't know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Bingo</td>
<td>21</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>b. Lottery</td>
<td>22</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>c. Blackjack, &quot;21&quot;, or, Poker</td>
<td>23</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>d. Bridge, Canasta, Rummy Or other card games</td>
<td>24</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>e. Numbers</td>
<td>25</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>f. Horse Races</td>
<td>26</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>g. Other sporting events</td>
<td>27</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>h. Slot machines</td>
<td>28</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>i. Pin Pall Machines</td>
<td>29</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>j. Shooting Dice (Craps)</td>
<td>30</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>k. Roulette</td>
<td>31</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
<tr>
<td>l. Any other ways (Specify)</td>
<td>32</td>
<td>1()</td>
<td>2()</td>
<td>3()</td>
<td>4()</td>
<td>5()</td>
</tr>
</tbody>
</table>

Ways to Bet Money
A. With members of your family or with friends
B. At charitable or religious organizations
C. State operated and licensed facilities
D. Professional or commercial facilities that are not licensed
E. Have not bet money this way at all in the past four weeks.
Column Codes & Guides
(ASK Q. 19 & 20 FOR EACH TYPE CHECKED A, B, C, OR D IN Q. 18)

Question 19. In the past four weeks, how much money would you say you used or set aside for betting on__________?

<table>
<thead>
<tr>
<th>Amount used*</th>
<th>Bingo</th>
<th>Lottery</th>
<th>Numbers</th>
<th>Horse Races</th>
<th>Other sporting events</th>
<th>Slot Machines</th>
<th>Pin Ball Machines</th>
<th>Craps (shooting dice)</th>
<th>Roulette</th>
<th>Blackjack, &quot;21&quot;, Poker</th>
<th>Bridge, Canasta, Rummy</th>
<th>Other</th>
</tr>
</thead>
</table>

Amount Used
1 column per type. To be coded in actual dollar amounts to the nearest dollar
C1 = about $1.00  
C2 = About $2.00  
C3 = about $3.00  
XX = Other  
C0 = less than $0.65  
99 = $99.00 or more  
-- = Not applicable  
? = Don't know/ no answer  
* = 0
**Question 20- Column Guide and Codes**

When you think of all the money you have bet on (each item bet on in Q. 18) during the past four weeks, how much would you say you have gained or lost when you add up everything?

<table>
<thead>
<tr>
<th>Event</th>
<th>Gained or Lost*</th>
<th>Amount***</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Bingo</td>
<td>35</td>
<td>36</td>
</tr>
<tr>
<td>b. Lottery</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>c. Numbers</td>
<td>43</td>
<td>44</td>
</tr>
<tr>
<td>d. Horse Races</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>e. Other sporting events</td>
<td>51</td>
<td>52</td>
</tr>
<tr>
<td>f. Slot machines</td>
<td>55</td>
<td>55</td>
</tr>
<tr>
<td>g. Pin Ball machines</td>
<td>59</td>
<td>60</td>
</tr>
<tr>
<td>h. Craps</td>
<td>63</td>
<td>64</td>
</tr>
<tr>
<td>i. Roulette</td>
<td>67</td>
<td>68</td>
</tr>
<tr>
<td>j. Blackjack, &quot;21&quot;, Poker</td>
<td>71</td>
<td>72</td>
</tr>
<tr>
<td>k. Bridge, Canasta, Rummy</td>
<td>75</td>
<td>76</td>
</tr>
<tr>
<td>l. Other</td>
<td>79</td>
<td>80</td>
</tr>
</tbody>
</table>

*Gained or lost

1 = gained
2 = lost
5 = even
6 = don't remember/no answer
- = not asked this question
0 = other A list of responses will be kept in this category

**Amount**

To be coded in actual dollar amounts to the nearest dollar.

0 = about $5
1 = About $15
2 = about $25
3 = about $35
APPENDIX B
APPENDIX B

One recoding scenario for the American data involves an arbitrariness not present in the others and requires justification. This scenario is referred to on pages thirty-eight and forty-six within the text, and involves the recoding of gambling avenues into gambling propensity. That is, twelve independent responses based on indication of gambling in any of twelve ways is converted to one cumulative response which indicates whether an individual gambled or not. The manner in which this assignment is made was based on a desire to make the most economic use of missing cases. The procedure is arbitrary in comparison with other recodings, which mainly involve either collapsing of categories with the result of erasing certain values, i.e., distinctions, of a variable, or recoding certain known values as missing values for purposes of meaningful categorization. Unlike either of these procedures the present case involves transformation of missing values into an estimated value, and it is the derivation of the estimated value which requires explanation.

The problem is that of deciding how best to handle missing cases, i.e., respondent gives no answer, within any
of the twelve ways of gambling. There are three options: code as a missing case, code as an instance of gambling, and code as an instance of non-gambling. Within the option of missing case, one has two alternatives: throw out the respondent's answer for the type of gambling with no answer or discard the entire card, all twelve answers, of that respondent.

Examining the first missing case option, one finds that the cumulative method of scoring makes throwing out the one variable as a missing case not viable. The scoring system is based on a total of 60 signifying non-gambler, and anything less signifies the respondent as a gambler. The key point is that one needs a 5 on each of the 12 types to be classified a non-gambler, (5 stands for did not gamble per type) because one cannot gamble on any type in order to be classified as a non-gambler. To code one type as missing would leave a maximum possible score of 55, i.e., less than 60. Thus one cannot eliminate one variable without automatically classifying the respondent as a gambler. Thus, by default the respondent would be classified as that which he may not be, a gambler.

The second alternative here would be to throw out the entire set of responses for gambling types, i.e., discard the respondent completely for the gambling propensity output. This alternative has the following undesirable consequences. First, the many variables for which information is available
would be lost. Secondly, a prior analysis of the Gallup data revealed that 361 of the total respondent sample of roughly 1600 had gambled (Li, et. al., 1973b:7), yet my analysis yielded only 351 in the gambling category. Thus, it is a logical assumption that the 10 gambling cases unaccounted for are located in the missing case category. Thus, to discard the entire card (or even one unanswered variable on a card, as above) would be to throw out 10 cases of gamblers. Finally, in the same light, to discard an entire set of responses due to one or even a few no responses would be, simply in terms of probability, to discard some legitimate non gamblers. This is based on the fact that the ratio of non gamblers to gamblers among the complete responses is roughly 4 to 1.

The second option would be to code a missing case as having gambled in that particular mode. The difficulties with this choice are twofold. First, the aforementioned ratio of known respondent types of roughly 4 to 1 in favor of non gamblers (1204 to 361 in the Li study, see 1973c:7) makes this choice unwise probabilistically. Secondly, to code a missing case as a gambler would be to increase the effect of the arbitrariness in comparison with a coding of non gambler. A code of non gambler in a set of twelve responses with a minimum of a single gambling response would not alter the fact that the respondent would be classified as a gambler, i.e., have a score of less than 60. Conversely,
the choice of gambler on a single response of the twelve would change the designation to gambler for a respondent who did not gamble on the eleven known variables. Thus, while neither gambler or non gambler is without arbitrary assumption of an estimated value, the selection of the aforementioned third option, non gambler, seems the least arbitrary, both empirically and logically.

To conclude, the decision taken was to code missing cases within the twelve types of gambling used as a basis for gambling propensity in the American data as estimated values. The specific estimated value chosen was that of non gambler for all instances of missing cases.
APPENDIX C

The standardization procedure used to arrive at the data in table 38 (see pages one hundred six and seven) was undertaken so that amounts of money spent on gambling could be judged against an individual's yearly income. This procedure is followed consistently for volume outcomes within the monograph so as to provide a meaningful evaluation of gambling participation in terms of volume expenditure. The original data in the Tec study (1964p:37) crosstabulates yearly income against amount spent on gambling, and not against the more useful proportion of yearly income spent on gambling. This data, which is the basis of my standardization, is presented in its basic form (the three higher categories of amount spent on bets per week are collapsed into a single category) below in table 39:
Table 39: Amount of Money Bet Weekly on Soccer Pools by Yearly Income, Swedish Data

<table>
<thead>
<tr>
<th>Yearly Income</th>
<th>Up to 6000 kr.</th>
<th>Over 6000 kr.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 2 kr.</td>
<td>31 (.57)</td>
<td>98 (.39)</td>
<td>129</td>
</tr>
<tr>
<td>Over 2 kr.</td>
<td>23 (.43)</td>
<td>190 (.66)</td>
<td>213</td>
</tr>
<tr>
<td>Column Totals</td>
<td>54</td>
<td>288</td>
<td>342</td>
</tr>
</tbody>
</table>

The data from the above table were standardized and are so presented in table 38, in which form they were tested against hypothesis seven in the Swedish section of this study. The standardization procedure is as follows: beginning with the mean yearly income figure of 10,000 kronor (see page thirty-two) 5,000 kr. was subtracted and added to this figure to reach representative mean income figures for the brackets of less than 6000 kr. and over 6000 kr. per year, which do not yield such a figure. These figures were 5000 kr. and 15,000 kr. respectively. Then the base of .01 proportion of yearly income wagered on soccer pools (see page thirty-two) was multiplied times 5000 kr. and 15,000 kr., which yields cutting points of 50 kr. per year and 150 kr. per year for the lower and higher income groups, respectively, as boundaries for low and high volume spent on gambling.
(i.e., below the national mean for low volume and above for high volume). Then, 50 kr. was divided by 52 to obtain a mean weekly figure spent on gambling (soccer) for lower income individuals of .96 kr. To obtain a figure for upper income individuals, .96 kr. was then multiplied by 3 (because 50 kr. per year for the lower income group is one third of the amount spent yearly by the higher income group). This yielded a figure of 2.88 kr. spent weekly, as a mean, by higher income individuals on gambling (soccer pools).

Turning to Tec's data (table 39), it is observed that .57 of those with lower incomes spent the smaller amount on gambling. Rounding off .96 kr. to 1 kr., one finds that the lower income category, with its average weekly wager of roughly 1 krona, accounts for one half (one kr. over the national average stake of 2 kr., based on a national mean yearly expenditure of 104 kr. [see page thirty-two] and a 52 week year) of wagers under the national average, i.e., under .01, or roughly 2 kr. Thus, one multiplies .5 times the percent of lower income individuals in Tec's data who gamble below the national mean volume of 2 kr., i.e., .57, and one arrives at .285. This latter figure is then multiplied times 54, which is the number of individuals in the lower income column in Tec's sample. The product is
15.39, which is rounded to \(15^1\) to have a whole number in the completed table. This figure is then placed in the lower volume row for the lower income group. The other half of wagers under the national average of 2 kr., i.e., those spending between 1 and 2 kr. per week, which is also \(.5\) of \(.57\) or \(.285\), is also multiplied times 54 and likewise has a product of 15.39. This amount is added to the 23.22 (unadjusted) in the higher volume category of lower income individuals, and a rounded figure of 39 results. The figures 15 and 39 thus represent amounts in low and high categories respectively where the boundary is 1 kr. rather than 2 kr.

Using the 2 kr. figure for the higher income column, one first observes that individuals in the lower volume category averaged 2 kr. and under per week (insofar as 2 kr. is the national mean). This means that all the cases in the low volume category of high income individuals of Tec's data, or 97.92, (unadjusted) belong in the lower volume cell of the table for the standardized results. Secondly, one notes that for the higher income category, with its average weekly wager of 2.88 kr. per week, about two thirds (2 kr.,

\[\text{It will be recalled that Tec generally presents only percents in her tables, which are rounded for clarity. The actual cases, if taken as the literal product of the rounded percent times } N, \text{ would usually not come out as whole numbers, which of course is irrelevant for Tec who is not presenting these. In this study however, a readjustment to the original whole numbers for cases, upon which the rounded percents were based, was made.}\]
the national average, over 2.88 kr., the higher income average wager) of the high volume bettors, i.e., over 2 kr., fall within the 2-2.88 kr. range. As Tec's data show 190.08 (unadjusted) in the high volume category, this amounts to 126.42 (unadjusted). These bettors are added to the 97.92 of Tec's low volume category for a revised low volume category based on a ceiling of 2.88 kr. The adjusted figure is 224. The amount of 126.42 is subtracted from the 190.08 in the Tec high volume category for a balance of 63.66, or an adjusted figure of 64. This amount represents the number of cases in a high volume category with a boundary of 2.88 kr. rather than 2 kr., as the 224 represents the number of cases in a low volume category with this boundary.
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SELECTED BIBLIOGRAPHY

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General


