

DEVELOPING A FIELD-INTENSIVE METHODOLOGY FOR GENERATING A RANDOMIZED SAMPLE FOR GANG RESEARCH

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ABSTRACT

This paper was stimulated by concerns for methodological issues in gang research. The paper describes the strategies in developing a design for drawing a stratified proportional random sample of gang members and goes beyond limited non-probability quota samples, to compare gang members across communities and gang variations. First, this paper proposes procedures and techniques for drawing a random sample of gang subjects based on probability proportional to size quota. Second, it describes the role of ethnographic field work and social mapping in defining sampling frames. Third, it presents the use of MapInfo in developing and mapping catchment areas. Fourth, it describes the procedures utilized in generating gang rosters and their role in generating interview sample quotas. And finally, it discusses the processes for developing sampling quotas and drawing of the sample.

INTRODUCTION

Mexican-American barrio gangs have consistently drawn social scientists and other policy-makers' attention (Barker 1943; Gonzalez 1980; Heller 1952; Klein 1971; Mazon 1985; McWilliams 1943). In the past decade and a half, a new set of studies has emerged on Mexican-American and Latino gangs (Horowitz 1983; Jankowski 1992; Sanders 1995; Vigil 1979). These studies add important substantive knowledge and perspectives. They employ a range of approaches, issues, and populations. Yet a major concern with these new studies is that their methodology has not advanced issues of generalizability (Ball, Curry 1995; Moore 1977), representativeness (Hagedorn 1996; Moore, Vigil 1987), and comparability (Curry, Spergel 1988; Esbensen, Huizinga 1993). For instance, strategies for overcoming bias in study subject selection that were common in many earlier studies of gangs have yet to be addressed in these new studies (Klein 1996; Short 1990; Spergel, Curry 1993). These methodological problems remain key obstacles in the development of knowledge in this area. This essay seeks to advance gang research methodology particularly as it concerns limitations in subject selection bias.

THE EMERGENT CONTEMPORARY GANG

During the past decade and a half there has been a major growth, spread, and increase in gangs and gang activities (Cummings, Monti 1993; Esbensen, Huizinga 1990; Fagan 1986; Klein 1996; Spergel 1995). There is little disagreement about gangs' growing involvement in narco-trafficking (Bourgois 1989; Curtis 1992; Decker, Van Winkle 1994; Huff 1996) and in the escalation of lethal

violence compared to gangs of earlier periods (Erlanger 1979; Fagan 1996; Johnson, Sanabria 1990a; Miller 1966; Moore 1988; Yablonsky 1962). The changing nature of gangs has not been adequately investigated because many studies fail to consider, in a theoretical and systematic manner, changes in the gangs, and their relationship to drugs and violence (Fagan 1993; Hagedorn 1994a; Klein, Maxson, Cunningham 1991; Miller 1974, 1975, 1980; Moore 1988; Moore, Vigil 1993b).

There is also a great deal of debate about the extent, magnitude, and variability between gangs and within gangs (Huff 1996; Klein 1996; Miller 1975; Moore 1988; Spergel 1989). However, few studies focus on gangs' commonalities and differences or how these gangs have or are evolving and changing within a community context (Monti 1993; Sanders 1995). There has been little progress in distinguishing how gang activities differ from individual gang members' activities. The studies are not able to address the influence of community context (Kasarda 1985a; Sampson 1992b), gang variations (Jankowski 1992; Klein 1996; Spergel 1995); the influence of the gang on other youth and adults in the community and vice versa (Huff 1996; Sampson 1992a; Sullivan 1989; Warr 1996). One still finds much debate as to what constitutes a gang (Ball, Curry 1995; Horowitz 1990), and gang social orders (Cummings, Monti 1993; Padilla 1992; Taylor 1990a) or what is gang related activity (Cummings, Monti 1993; Fagan 1989; Klein 1996; Padilla 1990).

The spread and growth of gangs in urban areas have become more closely associated with gang drug enterprises (Padilla 1990; Taylor 1990b), escalating gang violence (Fagan 1996; Klein, Maxson 1987; Vigil 1988b),

and increasing involvement with adult criminal organizations (Sullivan 1991) especially for Hispanic (Padilla 1990) and Black (Sampson 1987) gangs. Although there is some evidence that gangs have grown and spread (Block, Block 1994; Needle, Stapleton 1983; Spergel, Curry 1993), the exact nature and magnitude are beyond the scope of most current studies that have relied on institutionally derived (Curry, Spergel 1988) and "in situ" generated data (Jankowski 1992; Sanders 1995; Vigil 1988a). As it pertains to Mexican-American gangs (Horowitz 1983; Moore, Mata 1978; Sanders 1995; Vigil 1988a), the gang and drug violence nexus (Fagan 1996; Goldstein 1987) has yet to be studied systematically or as a key study focus (Moore, Garcia, Garcia, Cerda, & Valencia 1978; Sanders 1995).

Recent studies suggest that the current gang scene is influenced by the growth of an underclass within the minority class structure (Jencks 1991; Kasarda 1985b; Moore 1985; Moore, Vigil 1993a; Vigil 1989; Wilson 1988). This has destabilized innercity neighborhoods, weakened minority institutions (Bursick, Grasmick 1993), and lessened the normalizing influence of the middle and working-class who reside in more affluent neighborhoods (Fagan 1992; Sampson 1987; Spergel 1995). The decline of neighborhood institutions and economies increases welfare dependency and the growth of the informal economy (Bourgeois 1995; Fagan 1992, 1993; Kasarda 1985b; Sampson, Groves 1989; Sullivan 1991).

Few studies address what the influence of this underclass is on the persistence or in the emergence of gangs. While some allude to increasing influence of macro-level factors (Reiss 1990), few provide data on its impact or relationship to the gangs' primary activities, leadership, organization, or their connections to adult straight and criminal social worlds (Hagedorn 1994b; Johnson, Sanabria 1990b).

Studies tend to focus on gangs in more traditional and established neighborhoods (Horowitz 1983; Moore, Mata 1978; Moore, Vigil 1993a). Although these provide important rich, in-depth data, they do not adequately address the emergence of gangs in these more non-traditional underclass barrios and ghettos. Thus, most studies do not address the saliency, extensiveness, or variations in gangs, drug use, and violence across different communities (Curry, Spergel 1988; Klein 1996). Given the emergence of gangs within this new social context (Monti 1993), there is a clear

need for methodologies that are able to account for these changes in the nature of gangs. The application of new methodological strategies in the study of gangs should allow for assessing and discerning the dynamics of contemporary communities (Reiss 1986), gangs (Decker 1996), and gang member variations (Block, Block 1994; Curry, Spergel 1988; Needle, Stapleton 1983).

METHODOLOGICAL ISSUES

Study subject selection bias and non-probability sampling remain key problems central to most "in situ" (Akins, Beschner 1978; Hagedorn 1996; Moore 1977) and related community field study efforts, especially as they concern representativeness and bias. While rich data and interpretations characterize many of these field studies (Horowitz 1983; Moore, Mata 1978b; Sanders 1995; Vigil 1988a) there are some limitations in the generalizability of studies based on snowball, convenience, or quota samples. In studies of "hard-to-reach" or "hard-to-serve" populations (Watters, Bernacki 1983; Weibel 1990), the community field study (Horowitz 1983; Padilla 1992), the ethnographic field-station (Akins, Beschner 1978) and collaborative methodologies (Moore 1977) attend to key problems inherent in these studies particularly as they relate to validity and access. While enhancing access to criminal, delinquent, or deviant behaviors and settings, the problem of a study subject bias (Ss) and representativeness still limits many of these studies (Hagedorn 1996).

Another problem associated with most earlier studies is that they did not take into consideration the diversity of gang status and types in their sampling procedures, therefore limiting their generalizability to the study sample and area. A few of these studies allude to the need to develop robust, reliable measures and the use of research designs that addresses issues of gang members' status (e.g., leader, core and fringe) and organizational type (e.g., criminal gang, territorial/barrio gang, and school gangs) (Fagan 1996; Huff 1996; Sanders 1995). We argue that gang researchers need to enhance and expand random sampling design to improve the scope and implications of research results.

The study upon which this article is based seeks to explore the nature and characteristics of youth gangs in Mexican-American communities by seeking to utilize and extend the community field studies approach

suggested in works by Moore (1978a), Horowitz (1983), Decker (1996), Fagan (1989), and Akins and Beschner (1978). Moreover, this study incorporates a multi-level design and probability-based sample to collect extensive life history and gang interview data.

This article describes a sampling methodology that generates a probability-derived quota sample in an investigation of Mexican American gang members. It borrows recent innovations of ethnographic-based targeted sampling approaches (Carlson, Wang, Siegal, Falck, & Guo 1994) which seek to fill in the gaps created by traditional non-probability sampling approaches. This theory-driven sampling strategy assures the implementation of a multilevel research design that incorporates the community context and individual characteristics of gang members.

This paper identifies the required phases in generating a probability sample used in this study. These phases include: 1) establishing parameters and ranges within a community context; 2) identifying gangs and associating them with specific geographical areas; 3) differentiating areas (catchment) by using block level social indicators data; 4) identifying gang types; 5) acquiring gang rosters of all gangs in these catchment areas; and 6) drawing a randomized representative sample of gangs and gang members among the catchment areas.¹

COMMUNITY CONTEXT: ESTABLISHING PARAMETERS AND RANGES

The delimiting of the study by two large geographical areas (South and West sides) in San Antonio was deemed essential on substantive, theoretical, and pragmatic considerations. These two areas remain major centers of San Antonio's Mexican-American population, encompassing centers of commerce and residency for this group. These areas also have the highest concentration of delinquent behavior and Mexican-American gang activity. This delimitation was based on secondary data such as the U.S. Census, criminal justice data, public housing statistics, and previous published governmental reports and studies.

After identification of these areas, community field workers associated with the project began collecting data about distinct community and neighborhood areas. They also began acquainting themselves with gang members and with community and neighborhood influentials, as well as collecting data on gangs and gang activity. Extensive efforts were made

to gain access, entree, and rapport with these persons. Due to the delinquent, deviant, criminal, or *déclassé* nature of some gang activities, it is often difficult to accurately and reliably identify gang members and gain information. This is similar to problems encountered in social and public health research with "hidden populations."² Unstructured individual and group interview data were collected as fieldworkers' schedules and routines permitted on a daily basis.

After gaining entree, trust, and rapport, community researchers began to collect observational data based on field work in gang hangouts such as recreational centers, housing projects, downtown areas, neighborhood businesses, and other public gatherings such as parks. All efforts were made not to rely solely on institutional agencies and agents of social control such as school officials or police. Attention was focused on the primacy to develop and maintain our own networks and presence in these communities and with gangs in these areas. In spite of a limited number of field workers, each community researcher developed his or her own area, contacts, and networks.

DEVELOPING A SAMPLING FRAME Social Mapping and Identification of Catchment Areas With Gangs

Our community field researchers then began social mapping of these communities and field observation work as suggested by Block (1993) and Stark (1987). Social mapping assisted us in the identification of gangs and the territories of these gangs along with major legal and illegal gang activities. The mapping was based on community researchers' observations of gangs and contacts with gang members, community gatekeepers, parents of gang members, and small businessmen in the targeted areas. The two broad regions, San Antonio's Westside and Southside, were divided into nine catchment areas. The delimitation of these areas was based on the identification of Mexican American neighborhoods and "natural areas." Most of the catchment areas are separated by major thoroughfares, physical barriers or other distinguishing landmarks or boundaries (See Figure 1).

Each catchment area varied in size and population density. Most of San Antonio's present gang territories and neighborhoods coincided with our nine catchment areas. Nonethe-

San Antonio Gang Project Catchment Areas

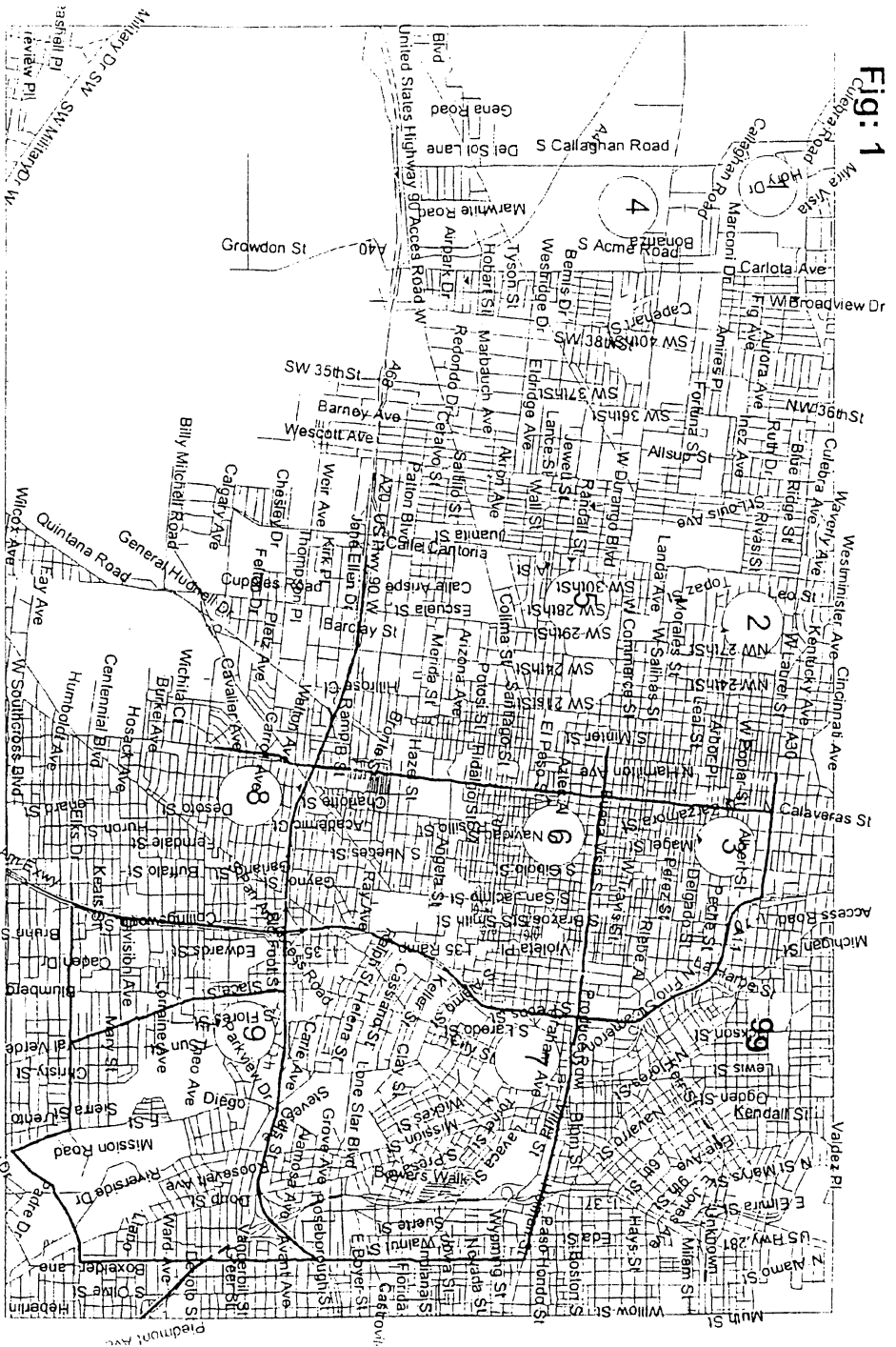


Fig: 1

Table 1: Characteristics of Catchment Areas Based on Social Indicators (in percentage)

Catchment Area	Unemployed Males	Houses Below Poverty	Teen School Dropout	Female Headed Houses	Houses on Public Assistance	Average Percent
1	42	37	21	31	19	30
2	45	46	18	35	25	34
3	53	44	45	31	23	39
4	41	38	19	30	16	29
5	48	50	22	43	30	39
6	45	50	29	45	32	40
7	48	40	23	39	19	34
8	41	33	11	25	13	25
9	42	38	13	42	22	31
Range	12	16	34	20	18	15

less, each catchment area may have one or more active gangs claiming it or portions of it as their territory. The catchment areas are generally referred to as: 1) Loma Park, 2) Prospect Hill/Rosedale, 3) West End, 4) Las Colonias (Edgewood), 5) Las Palmas, 6) Alazan Apache, 7) Downtown, 8) Palm Heights, and 9) Denver Heights/Highland Park. These areas were then used as sampling frames to stratify by catchment area, gang types, and gang membership status.

Following the establishment of catchment areas, the community researchers then sought to identify all the gangs in each catchment area. For a period of ten months, the community researchers went out daily to establish contact, observe gang activities, and develop gang rosters. Six types of gangs were originally identified. For sampling purposes, we further grouped them into three primary types of gangs: 1) criminal gangs (consisting of criminal-adult connected and criminal-non-adult connected) whose primary goal was to engage in organized, illegal activities such as drug dealing and auto theft; 2) barrio gangs, whose key goals revolved around barrio and school youth networks defending declared gang turf through fighting and related violent activities; and 3) juvenile delinquent gangs (including school gangs, small neighborhood gangs, and delinquent youth) whose primary activities were consisted of disorganized antisocial behaviors and use/abuse of drugs and alcohol. We excluded barrio "palomillas" (Rubel 1966), or neighborhood friendship groups; tagging crews; and social athletic clubs. In addition, we did not include youth who were at risk of becoming gang members, or who had been gang members, but were not currently active. These youth still engaged in

antisocial, delinquent, or criminal activities, but not as gang members or gang activity.

Differentiating Catchment Areas and Use of MapInfo

Based on the results of the social mapping, we utilized MapInfo (MapInfo Corporation 1995), a GIS-based computer software to profile the nine catchment areas (see Figure 1). MapInfo allows the user to thematically map data to show representation at various levels including state, county, city, census tract, and street block groups.

Based on this information, we were able to delineate the socioeconomic variables associated with the catchment areas. This was accomplished by utilizing the block group level information generated by MapInfo, even though it did not coincide with traditional mapping units.

Following Kasarda's (1993) lead, we were able to compile the five social indicators of underclass using the 1990 Census at the block group level for each of the nine catchment areas. These include percentage of: 1) individuals below poverty level; 2) unemployed males; 3) teen-age high school dropouts; 4) households receiving public assistance; and 5) female headed households.³ In addition to its mapping function, information pertaining to the 1990 Census can be compiled and imported into MapInfo to represent any specific area of interest. Table 1 displays the underclass characteristics for all nine catchment areas, which indicate considerable differences among them. These social indicators were supplemented by qualitative data from community researchers. This additional information helped in explaining variations and discerning differences between gangs and across catchment

areas.

GENERATING SAMPLING QUOTA Sampling Frame Parameters

In this study's sampling frame, there are three parameters that are determining factors of sampling: catchment area, gang types, and gang membership status. Catchment areas allowed us to test our research hypotheses across community and neighborhood areas. They were also used as design frames from which a stratified sample was generated. The gang type parameters allowed for a representative sample in the nine catchment areas. We also stratified with the third parameter, gang membership status. While this parameter is considered important, few studies provide clear directions that address study subject selecting (Ss) bias and assure sampling of gang members by status, although most studies refer to Klein's categories of leaders, cores, and peripherals. This study was grounded by empirical descriptions, uniquely suited to the gangs under observation, but not reflected in other gangs. In this manner, we could later describe from survey data the gang members' status in their respective gangs, yet still allow for the range of gang status reflected in their gang's specific organization.⁴ In short, we utilized the gang type and status of gang membership as important stratification parameters.

Unlike non-probability samples, this method goes beyond quota or random sampling of small gang rosters. It also seeks to limit Ss bias in the recruitment of who is to be interviewed. It provides community researchers clear guidelines about how to select gang members, and increases confidence in the results of quantitative and qualitative data analysis. The result of our field work efforts, and consequently, our social mapping of the research communities, was crucial and mandatory in a sampling design seeking to generate a representative sample (Kalton 1983; Spreen 1993; Timmerick 1994). As a result, it allowed us to generate a probability proportional to size (PPS) sample that takes into consideration all of the related parameters (Kalton 1983).

Gang Rosters

We developed rosters of gangs through different information sources. These rosters included the name and street address of each member of the gangs in our nine catchment areas. Additionally, the rosters provided gang

membership status of rank-and-file members and gang leaders.⁵ The validity and accuracy of gang rosters were checked using at least three of four sources: gatekeepers, gang member contacts, key informants, and field workers' observations. A gatekeeper provides access to a gang on the behalf of the community researcher. A gang-contact refers to a working relationship with a member of a specific gang. Gang contacts (e.g., gang member, relative, community resident, or social service worker) provide our community researchers detailed information about their gangs, which helps to verify location, gangs' existence, rosters, activities, etc. Third, key informants are individuals who are personally or socially associated with the target population and have first-hand information on gang members. A final source was derived directly from field observation of gang members and their associates' activities in situ. Information gained through this source was always cross checked and verified by other sources.

Generating Proportional Targeted Sampling Quotas

Based on the previous information, the proportional sampling quotas for each catchment area were generated. These quotas provide community researchers with specific numbers and type of gang members to be recruited for a face-to-face interview. These quotas are derived in a two-step process:

1. With a preset total number of gang subjects ($N=150$)⁶, the number of gang members (n_i) for each catchment area is calculated as the following:

$$t_i = N_i / N$$

$$n_i = t_i N_i$$

where

t_i = proportion of gang members in each catchment area

N_i = number of gang members in each catchment area

N = total number of gang members in nine catchment areas to be interviewed

n_i is number of gang members to be interviewed for each catchment area ($i = 1 \dots 9$)

2. With information collected by community researchers on types of gangs (barrio, criminal, and school-based/delinquent) and composition of gangs (leader and core members), number of gang members of specific characteristics (n_{ijk}) to be recruited are fur-

then specified for each catchment area:

$$n_{ijk} = n_j g_j P_k$$

where

g_j = proportion of gangs in each type of gangs ($j = 1 \dots 4$)

P_k = proportion of gangs with different status ($k = 1, 2$)

These quotas will serve as guidelines for our community researchers to plan, arrange their field activities, and collect gang member interviews. The sample of gang members to be interviewed will be drawn using a stratified systematic sampling method (Babbie 1995).

FIELD PROCEDURE TO CONTACT GANG

Once PPS-derived quotas for each catchment area are drawn, community researchers are given specific guidelines and training on how to randomly select gang members from gang rosters for the project's face-to-face interviews. A gang member who is selected may refuse or not be available. There are a number of factors that may affect a community researcher's ability to access the PPS-derived quota: gang member's death; gang member refusing or dropping out; gang member being arrested and incarcerated; and gang members moving out of the area. It was therefore decided that subjects would be randomly selected from available gang rosters for each catchment area until the PPS quota is met. When a gang member is selected from a gang roster, but is not available or refuses an interview, we require that the next person meeting the selection criteria be designated for interviewing. The refusal rates will be recorded for adjustment in later analysis. In short, the community researchers have a clearer set of guidelines on how to draw Ss for interviews, of recording refusals, and of providing guidelines for Ss replacement.

SUMMARY

This initial effort seeks to develop a verifiable, systematic, rational approach to improve and extend gang research methodology involving sampling and Ss selection bias. The approach suggested herein builds on: 1) the community field work team's ongoing field work — an iterative process of identifying gangs, gang membership, and gang activities in particular catchment areas; 2) social indicator team delimiting areas, connecting these to block level data and PPS quota drawn interviews; and 3) developing

sampling parameters and frames for community researchers to interview gang Ss.

The use of community researchers' field study efforts to identify gangs and the process of development of catchment areas as well as final production of sampling quotas are central to this approach. With catchment areas building on block data as the basic unit, this allows development of sampling frames, which are key to improving the precision and representativeness of gang Ss sampling and lessening respondent selection bias. Equally important are the two teams' involvement in efforts to assure meeting the study's overall aims, design and collection and interpretation of data and findings. It is a multi-phase process that is iterative, integrated, and cumulative. The project requires two teams working cooperatively, yet with their own tasks, requisites, and procedures.

DISCUSSION

This paper's objective is to contribute to the advancement of gang research design and methods, specifically in emerging Mexican American underclass communities. Others seeking to test or extend this approach will need to adapt these procedures: 1) to their own study's aims and design; 2) to their community researchers' field study efforts, which are quite intensive, iterative, and challenging; 3) to gang and community realities and contexts which shape their own gang scenes; 4) to "social mapping" requisites that meet study design and data needs; and 5) to existing indicator and related data to profile the community and neighborhood context(s). This approach provides community researchers with clear guidelines about gang member study selection and recruitment; attends to multilevel study design's requisites; and increases confidence in the results of quantitative and qualitative data analysis. Consequently, ethnographic data, intensive field work and social mapping of the research communities are crucial and essential in a sampling design to generate a representative sample (Kalton 1983; Kish 1971; Sreen 1993).

In order to advance the persisting and emerging gang research agenda, there is a great need to go beyond limited small random samples or non-probability (quota, convenience, or snowball) samples. There are a number of strategies that could be used to deal with the problem of study sample selection bias, representativeness, and salience of gang

attributes, activities, or attitudes. The sampling procedure discussed above will allow us to examine and test our hypothesis about the relationship between a growing underclass in a Mexican-American community and gangs, drugs, and violence. The sampling procedure will also allow us to describe and explore the types, range, and central activities of San Antonio's Mexican-American gangs. While not imposing a pre-established gang type or membership, the design and sampling approach is stratified by catchment area, gang type, and two general levels of membership. It also allows us to compare and contrast community, gang, gang leader, and rank-and-file differences in a range of Mexican-American communities. This study should contribute to methodological strategies seeking to improve the study of gangs in diversified communities, especially those with underclass characteristics (Wilson 1988).

Finally, many early gang studies typically utilized gang samples that relied on snowball sampling techniques or on gang rosters of small gang provided by social service agencies, criminal justice system, or other institutions. We concur with those who argue that institutionally based gang data lacks the precision necessary for probability sampling designs (Klein 1996; Spergel 1995) and have serious limitations (Akins, Beschner 1978; Moore 1977). Given the above concerns, we have developed a sampling approach that others may consider, yet will need to adapt to their study's aims and design, and the realities of their respective gang scene(s) and community context. As many gang studies are exploratory, including those on Mexican-American gangs, and as few are theory-driven and/or hypothesis-testing, this study effort allows for evaluating the need and utility of a multi-level design. It also allows us to test the utility and limits of an approach to study subject bias in recruitment of gangs and gang members. The approach described herein will serve to address the issues of generalizability and the representativeness of gang studies like ours.

END NOTES

¹Twelve focus group sessions were conducted prior to the development of the sampling plan. Information collected in these focus groups guided us in planning and developing the sampling design and procedures and study questionnaire. See Valdez and Kaplan (in press) for a detailed discussion on using focus groups in gang research.

²Hidden populations are defined as "a subset of the general population whose membership is not readily

distinguished or enumerated based on existing knowledge and/or sampling capabilities" (Wiebel 1990). Many hidden populations, homeless runaway youth, IDUs, street prostitutes, (Akins, Beschner 1978) etc. are generally viewed as "hard to reach" and/or "hard to serve" (unresponsive). Standard survey sampling methods used in social science are not appropriate or well suited for dealing with these populations, since the research population is not readily available or accessible (Kish 1987).

³Formula by Kasarda (1993) was used for calculations of social indicators.

⁴Numerous studies detail the range of gangs and gang members. Ranging from associations based on street corner friendship types to more formal social orders. Gang membership is as complex as it ethnic subculture, its gang structure, and historical antecedents.

⁵Previous studies have not adequately described how their studies have sampled the range of gang members or avoided study subject selection bias. It maybe that these reports only access the more verbal, outgoing, or self-promoting gang members.

⁶It has been previously determined that a sample size of 150 would provide sufficient statistical power based on known effect size to test the hypotheses of the proposed research project.

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