Appendix B

UCINET IV DatasetsUCINET IV DatasetsUCINET IV Datas

The following pages describe the standard UCINET IV datasets provided with the program. Multirelational data are stored, when possible, in a single multirelational data file. Each relation within a multirelational set is labelled and information about the form of the data is described for each individual matrix.

BERNARD & KILLWORTH FRATERNITYBERNARD & KILLWORTH FRATERNITYBERNARD & KILLWORTH FRATERNITY

DATASET BFRAT

DESCRIPTION Two 58×58 matrices:

BKFRAB symmetric, valued.
BKFRAC non-symmetric, valued (rankings).

BACKGROUND Bernard & Killworth, later with the help of Sailer, collected five sets of data on human interactions in bounded groups and on the actors' ability to recall those interactions. In each study they obtained measures of social interaction among all actors, and ranking data based on the subjects' memory of those interactions. The names of all cognitive (recall) matrices end in C, those of the behavioral measures in B.

These data concern interactions among students living in a fraternity at a West Virginia college. All subjects had been residents in the fraternity from three months to three years. BKFRAB records the number of times a pair of subjects were seen in conversation by an "unobtrusive" observer (who walked through the public areas of the building every fifteen minutes, 21 hours a day, for five days). BKFRAC contains rankings made by the subjects of how frequently they interacted with other subjects in the observation week.

REFERENCES

Bernard H, Killworth P and Sailer L. (1980). Informant accuracy in social network data IV. Social Networks, 2, 191-218.

Bernard H, Killworth P and Sailer L. (1982). Informant accuracy in social network data V. Social Science Research, 11, 30-66.

Romney K and Weller S. (1984). Predicting informant accuracy from patterns of recall among individuals. Social Networks, 6, 59-78.

BERNARD & KILLWORTH HAM RADIOBERNARD & KILLWORTH HAM RADIOBERNARD & KILLWORTH HAM RADIO

DATASET BKHAM

DESCRIPTION Two 44×44 matrices.

BKHAMB symmetric, valued.
BKHAMC non-symmetric, valued (rankings).

BACKGROUND Bernard & Killworth, later with the help of Sailer, collected five sets of data on human interactions in bounded groups and on the actors' ability to recall those interactions. In each study they obtained measures of social interaction among all actors, and ranking data based on the subjects' memory of those interactions. The names of all cognitive (recall) matrices end in C, those of the behavioral measures in B.

BKHAMB records amateur HAM radio calls made over a one-month period, as monitored by a voice-activated recording device. BKHAMC contains rankings by the operators of how frequently they talked to other operators, judged retrospectively at the end of the one-month sampling period.

REFERENCES In addition to the references in the previous section, see:

Killworth B and Bernard H. (1976). Informant accuracy in social network data. Human Organization, 35, 269-286.

Bernard H and Killworth P. (1977). Informant accuracy in social network data II. Human Communication Research, 4, 3-18.

Killworth P and Bernard H. (1979). Informant accuracy in social network data III. Social Networks, 2, 19-46.

BERNARD & KILLWORTH OFFICEBERNARD & KILLWORTH OFFICEBERNARD & KILLWORTH OFFICE

DATASET BKOFF

DESCRIPTION Two 40×40 matrices.

BKOFFB symmetric, valued.
BKOFFC non-symmetric, valued (rankings)

BACKGROUND Bernard & Killworth, later with the help of Sailer, collected five sets of data on human interactions in bounded groups and on the actors' ability to recall those interactions. In each study they obtained measures of social interaction among all actors, and ranking data based on the subjects' memory of those interactions. The names of all cognitive (recall) matrices end in C, those of the behavioral measures in B.

These data concern interactions in a small business office, again recorded by an "unobtrusive" observer. Observations were made as the observer patrolled a fixed route through the office every fifteen minutes during two four-day periods. BKOFFB contains the observed frequency of interactions; BKOFFC contains rankings of interaction frequency as recalled by the employees over the two-week period.

REFERENCES See citations to the previous datasets.

BERNARD & KILLWORTH TECHNICALBERNARD & KILLWORTH TECHNICALBERNARD & KILLWORTH TECHNICAL

DATASET BKTEC

DESCRIPTION Two 34×34 matrices.

BKTECB symmetric, valued
BKTECC non-symmetric, valued (rankings).

BACKGROUND Bernard & Killworth, later with the help of Sailer, collected five sets of data on human interactions in bounded groups and on the actors' ability to recall those interactions. In each study they obtained measures of social interaction among all actors, and ranking data based on the subjects' memory of those interactions. The names of all cognitive (recall) matrices end in C, those of the behavioral measures in B.

These data concern interactions in a technical research group at a West Virginia university. BKTECB contains a frequency record of interactions, made by an observer every half-hour during one five-day work week. BKTECC contains the personal rankings of the remembered frequency of interactions in the same period.

REFERENCES See citations to the previous datasets.

DAVIS SOUTHERN CLUB WOMENDAVIS SOUTHERN CLUB WOMENDAVIS SOUTHERN CLUB WOMEN

DATASET DAVIS

DESCRIPTION One 18×14 matrix, binary.

BACKGROUND These data were collected by Davis et al in the 1930s. They represent observed attendance at 14 social events by 18 Southern women. The result is a person-by-event matrix: cell (i,j) is 1 if person i attended social event j, and 0 otherwise.

REFERENCES

Breiger R. (1974). The duality of persons and groups. Social Forces, 53, 181-190.

Davis, A et al. (1941). Deep South. Chicago: University of Chicago Press.

GAGNON & MACRAE PRISONGAGNON & MACRAE PRISONGAGNON & MACRAE PRISON

DATASET PRISON

DESCRIPTION One 67×67 matrix, non-symmetric, binary.

BACKGROUND In the 1950s John Gagnon collected sociometric choice data from 67 prison inmates. All were asked, "What fellows on the tier are you closest friends with?" Each was free to choose as few or as many "friends" as he desired. The data were analyzed by MacRae and characterized by him as "less clear cut" in their internal structure than similar data from schools or residential populations.

REFERENCE MacRae J. (1960). Direct factor analysis of sociometric data. Sociometry, 23, 360-371.

KAPFERER MINEKAPFERER MINEKAPFERER MINE

DATASET KAPMINE

DESCRIPTION Two 15×15 matrices

KAPFMM symmetric, binary.
KAPFMU symmetric, binary.

BACKGROUND Bruce Kapferer (1969) collected data on men working on the surface in a mining operation in Zambia (then Northern Rhodesia). He wanted to account for the development and resolution of a conflict among the workers. The conflict centered on two men, Abraham and Donald; most workers ended up supporting Abraham.

Kapferer observed and recorded several types of interactions among the workers, including conversation, joking, job assistance, cash assistance and personal assistance. Unfortunately, he did not publish these data. Instead, the matrices indicate the workers joined only by uniplex ties (based on one relationship only, KAPFMU) or those joined by multiple-relation or multiplex ties (KAPFMM).

REFERENCES

Kapferer B. (1969). Norms and the manipulation of relationships in a work context. In J Mitchell (ed), Social networks in urban situations. Manchester: Manchester University Press.

Doreian P. (1974). On the connectivity of social networks. Journal of Mathematical Sociology, 3, 245-258.

KAPFERER TAILOR SHOPKAPFERER TAILOR SHOPKAPFERER TAILOR SHOP

DATASET KAPTAIL

DESCRIPTION Four 39×39 matrices

KAPFTS1 symmetric, binary
KAPFTS2 symmetric, binary
KAPFTI1 non-symmetric, binary
KAPFTI2 non-symmetric, binary

BACKGROUND Bruce Kapferer (1972) observed interactions in a tailor shop in Zambia (then Northern Rhodesia) over a period of ten months. His focus was the changing patterns of alliance among workers during extended negotiations for higher wages.

The matrices represent two different types of interaction, recorded at two different times (seven months apart) over a period of one month. TI1 and TI2 record the "instrumental" (work- and assistance-related) interactions at the two times; TS1 and TS2 the "sociational" (friendship, socioemotional) interactions.

The data are particularly interesting since an abortive strike occurred after the first set of observations, and a successful strike took place after the second.

REFERENCE Kapferer B. (1972). Strategy and transaction in an African factory. Manchester: Manchester University Press.

KNOKE BUREAUCRACIESKNOKE BUREAUCRACIES KNOKE BUREAUCRACIES

DATASET KNOKBUR

DESCRIPTION Two 10×10 matrices.

KNOKM non-symmetric, binary.
KNOKI non-symmetric, binary.

BACKGROUND In 1978, Knoke & Wood collected data from workers at 95 organizations in Indianapolis. Respondents indicated with which other organizations their own organization had any of 13 different types of relationships.

Knoke and Kuklinski (1982) selected a subset of 10 organizations and two relationships. Money exchange is recorded in KNOKM, information exchange in KNOKI. See Knoke & Kuklinski (1982) for details.

REFERENCES

Knoke D. and Wood J. (1981). Organized for action: Commitment in voluntary associations. New Brunswick, NJ: Rutgers University Press.

Knoke D. and Kuklinski J. (1982). Network analysis, Beverly Hills, CA: Sage.

KRACKHARDT OFFICE CSSKRACKHARDT OFFICE CSSKRACKHARDT OFFICE CSS

DATASET KRACKAD non-symmetric, binary.
KRACKFR symmetric, binary.

DESCRIPTION Each file contains twenty-one 21×21 matrices. Matrix n gives actor n's perception of the whole network.

BACKGROUND David Krackhardt collected cognitive social structure data from 21 management personnel in a high-tech, machine manufacturing firm to assess the effects of a recent management intervention program. The relation queried was "Who does X go to for advice and help with work?" (KRACKAD) and "Who is a friend of X?" (KRACKFR). Each person indicated not only his or her own advice and friendship relationships, but also the relations he or she perceived among all other managers, generating a full 21 × 21 matrix of adjacency ratings from each person in the group.

REFERENCE Krackhardt D. (1987). Cognitive social structures. Social Networks, 9, 104-134.

NEWCOMB FRATERNITYNEWCOMB FRATERNITYNEWCOMB FRATERNITY

DATASET NEWFRAT

DESCRIPTION Fifteen 17×17 matrices.

NEWC0 - NEWC15 (except NEWC9) non-symmetric, valued (rankings).

BACKGROUND These 15 matrices record weekly sociometric preference rankings from 17 men attending the University of Michigan in the fall of 1956; data from week 9 are missing. A "1" indicates first preference, and no ties were allowed.

The men were recruited to live in off-campus (fraternity) housing, rented for them as part of the Michigan Group Study Project supervised by Theodore Newcomb from 1953 to 1956. All were incoming transfer students with no prior acquaintance of one another.

REFERENCES

Newcomb T. (1961). The acquaintance process. New York: Holt, Reinhard & Winston.

Nordlie P. (1958). A longitudinal study of interpersonal attraction in a natural group setting. Unpublished doctoral dissertation, University of Michigan.

White H., Boorman S. and Breiger R. (1977). Social structure from multiple networks, I. Blockmodels of roles and positions. American Journal of Sociology, 81, 730-780.

PADGETT FLORENTINE FAMILIESPADGETT FLORENTINE FAMILIESPADGETT FLORENTINE FAMILIES

DATASET PADGETT and PADGW

DESCRIPTION PADGETT

Two 16×16 matrices:

PADGB symmetric binary
PADGM symmetric binary

PADGW

One 16×3 matrix, valued.

BACKGROUND Breiger & Pattison (1986), in their discussion of local role analysis, use a subset of data on the social relations among Renaissance Florentine families (person aggregates) collected by John Padgett from historical documents. The two relations are business ties (PADGB - specifically, recorded financial ties such as loans, credits and joint partnerships) and marriage alliances (PADGM).

As Breiger & Pattison point out, the original data are symmetrically coded. This is acceptable perhaps for marital ties, but is unfortunate for the financial ties (which are almost certainly directed). To remedy this, the financial ties can be recoded as directed relations using some external measure of power - for instance, a measure of wealth. PADGW provides information on (1) each family's net wealth in 1427 (in thousands of lira); (2) the number of priorates (seats on the civic council) held between 1282-1344; and (3) the total number of business or marriage ties in the total dataset of 116 families (see Breiger & Pattison (1986), p 239).

Substantively, the data include families who were locked in a struggle for political control of the city of Florence in around 1430. Two factions were dominant in this struggle: one revolved around the infamous Medicis (9), the other around the powerful Strozzis (15).

REFERENCES

Breiger R. and Pattison P. (1986). Cumulated social roles: The duality of persons and their algebras. Social Networks, 8, 215-256.

Kent D. (1978). The rise of the Medici: Faction in Florence, 1426-1434. Oxford: Oxford University Press.

READ HIGHLAND TRIBESREAD HIGHLAND TRIBESREAD HIGHLAND TRIBES

DATASET GAMA

DESCRIPTION Two 16×16 matrices

GAMAPOS symmetric, binary
GAMANEG symmetric, binary.

BACKGROUND Hage & Harary (1983) use the Gahuku-Gama system of the Eastern Central Highlands of New Guinea, described by Read (1954), to illustrate a clusterable signed graph. Read's ethnography portrayed an alliance structure among three tribal groups containing balance as a special case; among Gahuku-Gama the enemy of an enemy can be either a friend or an enemy.

The signed graph has been split into two matrices: GAMAPOS for alliance ("rova") relations, GAMANEG for antagonistic ("hina") relations. To reconstruct the signed graph, multiply GAMANEG by -1, and add the two matrices.

REFERENCES Hage P. and Harary F. (1983). Structural models in anthropology. Cambridge: Cambridge University Press. (See p 56-60).

Read K. (1954). Cultures of the central highlands, New Guinea. Southwestern Journal of Anthropology, 10, 1-43.

ROETHLISBERGER & DICKSON BANK WIRING ROOMROETHLISBERGER & DICKSON BANK WIRING ROOMROETHLISBERGER & DICKSON BANK WIRING ROOM

DATASET WIRING

DESCRIPTION Six 14×14 matrices

RDGAM symmetric, binary
RDCON symmetric, binary
RDPOS symmetric, binary
RDNEG symmetric, binary
RDHLP non-symmetric, binary
RDJOB non-symmetric, valued.

BACKGROUND These are the observational data on 14 Western Electric (Hawthorne Plant) employees from the bank wiring room first presented in Roethlisberger & Dickson (1939). The data are better known through a scrutiny made of the interactions in Homans (1950), and the CONCOR analyses presented in Breiger et al (1975).

The employees worked in a single room and include two inspectors (I1 and I3), three solderers (S1, S2 and S3), and nine wiremen or assemblers (W1 to W9). The interaction categories include: RDGAM, participation in horseplay; RDCON, participation in arguments about open windows; RDPOS, friendship; RDNEG, antagonistic (negative) behavior; RDHLP, helping others with work; and RDJOB, the number of times workers traded job assignments.

REFERENCES

Breiger R., Boorman S. and Arabie P. (1975). An algorithm for clustering relational data with applications to social network analysis and comparison with multidimensional scaling. Journal of Mathematical Psychology, 12, 328-383.

Homans G. (1950). The human group. New York: Harcourt-Brace.

Roethlisberger F. and Dickson W. (1939). Management and the worker. Cambridge: Cambridge University Press.

SAMPSON MONASTERYSAMPSON MONASTERYSAMPSON MONASTERY

DATASET SAMPSON

DESCRIPTION Ten 18×18 matrices

SAMPLK1 non-symmetric, valued (rankings)
SAMPLK2 non-symmetric, valued (rankings)
SAMPLK3 non-symmetric, valued (rankings)
SAMPDLK non-symmetric, valued (rankings)
SAMPES non-symmetric, valued (rankings)
SAMPDES non-symmetric, valued (rankings)
SAMPIN non-symmetric, valued (rankings)
SAMPNIN non-symmetric, valued (rankings)
SAMPPR non-symmetric, valued (rankings)
SAMPNPR non-symmetric, valued (rankings)

BACKGROUND Sampson recorded the social interactions among a group of monks while resident as an experimenter on vision, and collected numerous sociometric rankings. During his stay, a political "crisis in the cloister" resulted in the expulsion of four monks (Nos. 2, 3, 17, and 18) and the voluntary departure of several others - most immediately, Nos. 1, 7, 14, 15, and 16. (In the end, only 5, 6, 9, and 11 remained).

Most of the present data are retrospective, collected after the breakup occurred. They concern a period during which a new cohort entered the monastery near the end of the study but before the major conflict began. The exceptions are "liking" data gathered at three times: SAMPLK1 to SAMPLK3 - that reflect changes in group sentiment over time (SAMPLK3 was collected in the same wave as the data described below). Information about the senior monks was not included.

Four relations are coded, with separate matrices for positive and negative ties on the relation. Each member ranked only his top three choices on that tie. The relations are esteem (SAMPES) and disesteem (SAMPDES), liking (SAMPLK) and disliking (SAMPDLK), positive influence (SAMPIN) and negative influence (SAMPNIN), praise (SAMPPR) and blame (SAMPNPR). In all rankings 3 indicates the highest or first choice and 1 the last choice. (Some subjects offered tied ranks for their top four choices).

REFERENCES Breiger R., Boorman S. and Arabie P. (1975). An algorithm for clustering relational data with applications to social network analysis and comparison with multidimensional scaling. Journal of Mathematical Psychology, 12, 328-383.

Sampson, S. (1969). Crisis in a cloister. Unpublished doctoral dissertation, Cornell University.

SCHWIMMER TARO EXCHANGESCHWIMMER TARO EXCHANGE SCHWIMMER TARO EXCHANGE

DATASET TARO

DESCRIPTION One 22×22 matrix, symmetric, binary.

BACKGROUND These data represent the relation of gift-giving (taro exchange) among 22 households in a Papuan village. Hage & Harary (1983) used them to illustrate a graph hamiltonian cycle. Schwimmer points out how these ties function to define the appropriate persons to mediate the act of asking for or receiving assistance among group members.

REFERENCES

Hage P. and Harary F. (1983). Structural models in anthropology. Cambridge: Cambridge University Press.

Schwimmer E. (1973). Exchange in the social structure of the Orokaiva. New York: St Martins.

STOKMAN-ZIEGLER CORPORATE INTERLOCKSSTOKMAN-ZIEGLER CORPORATE INTERLOCKSSTOKMAN-ZIEGLER CORPORATE INTERLOCKS

DATASET SZCID, SZCIG

DESCRIPTION SZCID: One 16×16 matrix, symmetric, binary.

SZCIG: One 15×15 matrix, symmetric, binary.

BACKGROUND These data come from a six-year research project, concluded in 1976, on corporate power in nine European countries and the United States. Each matrix represents corporate interlocks among the major business entities of two countries - the Netherlands (SZCID) and West Germany (SZCIG).

The volume describing this study, referenced below, includes six chapters on network theoretical and analytical issues related to data of this type.

REFERENCES Ziegler R., Bender R. and Biehler H. (1985). Industry and banking in the German corporate network. In F. Stokman, R. Ziegler & J. Scott (eds), Networks of corporate power. Cambridge: Polity Press, 1985.

Stokman F., Wasseur F. and Elsas D. (1985). The Dutch network: Types of interlocks and network structure. In F. Stokman, R. Ziegler & J. Scott (eds), Networks of corporate power. Cambridge: Polity Press, 1985.

THURMAN OFFICETHURMAN OFFICETHURMAN OFFICE

DATASET THUROFF

DESCRIPTION Two 15×15 matrices

THURA non-symmetric, binary
THURM symmetric, binary

BACKGROUND Thurman spent 16 months observing the interactions among employees in the overseas office of a large international corporation. During this time, two major disputes erupted in a subgroup of fifteen people. Thurman analyzed the outcome of these disputes in terms of the network of formal and informal associations among those involved.

THURA shows the formal organizational chart of the employees and THURM the actors linked by multiplex ties.

REFERENCE Thurman B. (1979). In the office: Networks and coalitions. Social Networks, 2, 47-63.

WOLFE PRIMATESWOLFE PRIMATESWOLFE PRIMATES

DATASET WOLF, WOLFI

DESCRIPTION WOLF: Two 20×20 matrices

WOLFK non-symmetric, binary
WOLFN symmetric, valued.

WOLFI: One 20×4 matrix, valued.

BACKGROUND These data represent 3 months of interactions among a troop of monkeys, observed in the wild by Linda Wolfe as they sported by a river in Ocala, Florida. Joint presence at the river was coded as an interaction and these were summed within all pairs (WOLFN).

WOLFK indicates the putative kin relationships among the animals: 18 may be the granddaughter of 19. WOLFI contains four columns of information about the individual animals: (1) ID number of the animal; (2) age in years; (3) sex; (4) rank in the troop.

ZACHARY KARATE CLUBZACHARY KARATE CLUBZACHARY KARATE CLUB

DATASET ZACHARY

DESCRIPTION Two 34×34 matrices.

ZACHE symmetric, binary.
ZACHC symmetric, valued.

BACKGROUND These are data collected from the members of a university karate club by Wayne Zachary. The ZACHE matrix represents the presence or absence of ties among the members of the club; the ZACHC matrix indicates the relative strength of the associations (number of situations in and outside the club in which interactions occurred).

Zachary (1977) used these data and an information flow model of network conflict resolution to explain the split-up of this group following disputes among the members.

REFERENCE Zachary W. (1977). An information flow model for conflict and fission in small groups. Journal of Anthropological Research, 33, 452-473.