The Phoenix 40: Filling in the Faces
Phoenix bond proposal: Can We Live With It, Can We Do Without It?

By PATTY PHOLESTROM

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Phoenix bond proposal: Can We Live With It, Can We Do Without It? is the title of the article. It discusses the Phoenix bond proposal and its potential impact on the city. The article is written in a clear and readable style, providing information on the bond proposal and its implications for the city's residents. The article is well-organized and easy to follow, making it a great read for anyone interested in the topic.
Phoenix Power Structure

![Image of a power structure diagram]

*Phoenix Power Structure*

This chapter is intended to provide an overview of the energy sources and the power structure in the Phoenix area. It is divided into two main sections: the traditional power sources and the newer renewable energy technologies. The traditional power sources include coal, natural gas, and nuclear energy, while the renewable energy technologies include solar, wind, and hydropower.

**The History of the Phoenix 40 — Passing the Torch**

The Phoenix 40, a group of 40 prominent Arizonans, was formed in the early 1970s to promote the state's economic development. Since then, the Phoenix 40 has played a key role in shaping Arizona's future and has been instrumental in passing the torch to the next generation of leaders.

As the name suggests, the Phoenix 40 consists of 40 individuals who have made significant contributions to the state. The group includes business leaders, politicians, educators, and community activists. Each member is chosen based on their influence and impact on Arizona's development.

Through its initiatives, the Phoenix 40 has focused on several key areas: education, economic development, and social welfare. The group has been instrumental in establishing partnerships with local universities and businesses to promote innovative solutions and sustainable growth.

The Phoenix 40 has also been actively involved in addressing social issues, such as poverty, education, and health care. Through its various projects and partnerships, the group has worked to improve the quality of life for Arizona residents.

In conclusion, the Phoenix 40 has been a valuable resource for Arizona's development. Its vision and leadership have been instrumental in passing the torch to the next generation of leaders, ensuring a bright future for the state.
THE POWER NETWORK IN PHOENIX: 
AN APPLICATION OF SMALLEST SPACE ANALYSIS 
by Daniel M. McLaughlin

INTRODUCTION

According to one recent account, a complete power network study has four general aspects: 1) Develop the connections of the people and the institutions comprising the supposed network, 2) Analyze the money flows into and out of the network, 3) Analyze the "outputs" (speeches, position papers, etc.) of the people and the institutions making up the network, and 4) Do interviews, attitude surveys, and/or observations of the important people identified by the network.

(Denhardt 74)

This paper demonstrates a method by which the first of these steps can be accomplished. It develops the connections of the people and the enterprises comprising what appears to be the power network in the Phoenix metropolitan area, an area of about one million inhabitants. However, the same procedures could be used for constructing networks at the state, regional, and national levels.

The study determines how 125 business, educational, legal, governmental, and charitable organizations in Phoenix are interconnected.

Four types of linkages were used in the analysis: 1) shared officers/directors, 2) shared family officers/directors, 3) shared law firms, and 4) shared club memberships. This linkage information, pairing each enterprise with every other one, was analyzed by a modified version of the Guttman-Lingoes smallest space analysis computer program. (Guttman 70) The resultant display shows, in two dimensional Euclidean space, the relative closeness of each of the 125 enterprises to each and all of the others.

*Acknowledgement is gratefully extended to James C. H. Johnson, as my project advisor, for theoretical and methodological aid.
SMALLEST SPACE ANALYSIS

Smallest space analysis is a technique whereby the information in a square symmetric matrix is analyzed, then the marginals are presented in a spatial representation according to distance or similarity. A small example will help explain the technique.

First we can build a 3 by 3 matrix with The First National Bank of Arizona, the Arizona State Government (Executive), and the Arizona Public Service Company on the marginals.

<table>
<thead>
<tr>
<th></th>
<th>LNB</th>
<th>Gov</th>
<th>APS</th>
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</thead>
<tbody>
<tr>
<td>LNB</td>
<td>x</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Gov</td>
<td>x</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>APS</td>
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<td>x</td>
</tr>
</tbody>
</table>

The numbers in the cells represent the number of men who are shared directors/officers. Since the larger the number in the cell the more similar the two enterprises, we will subtract each number from 10 leaving a distance matrix. The constant is unimportant since the computer program uses only the relative size of the distances.

<table>
<thead>
<tr>
<th></th>
<th>LNB</th>
<th>Gov</th>
<th>APS</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNB</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gov</td>
<td>10</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>APS</td>
<td>7</td>
<td>8</td>
<td>x</td>
</tr>
</tbody>
</table>

Now the smallest space analysis of this matrix yields the two dimensional solution.
The Guttman-Lingoes smallest space analysis technique can use any number of points (up to 125 in our version) and can give the solution in any number of dimensions. The perfect solution to any particular matrix will always be found in two dimensions less than the total number of points. However phi is given to indicate the extent to which any solution fits into the particular number of dimensions. The larger the phi the poorer the fit. All the calculations and plotting can be done by hand. But the work increases exponentially with each added point so the computer is very helpful.

The method of using interlocks to show distance and similarity of enterprises (Levine 72, Allen 74) is one of the most useful for studying power structures. While the Guttman-Lingoes program (Guttman 73) has been used in existing methodology, coupling its use with a combination of four types of interlocks is a new approach.

DATA COLLECTION

The data collection procedure involves several steps. The first type of data is the names and sizes of the largest enterprises in the area. The boundaries on the area are the Phoenix Standard Metropolitan Statistical Area, so all the outlying communities around the city are included. The categories included are 1) agriculture; 2) banking; 3) construction; 4) charity; 5) dealers of commerce; 6) educational institutions; 7) city, county, and state government; 8) holding companies; 9) hospitals; 10) hotels; 11) newspapers and broadcasting; 12) law firms; 13) manufacturing; 14) real estate; 15) retail sales; 16) savings and loans; 17) transportation; 18) utilities; and 19) wholesale sales.
Several directories (Phoenix Chamber of Commerce 73, Arizona Department of Education 73, Dun & Bradstreet 73, Phoenix Newspapers 73) were used to get an accounting of all the enterprises in the area.

For the thousands of enterprises concerned with business, there were several criteria to determine if they would be included in the study. 1) Every business has a net worth of $1 million or over. 2) Every business had at least $5 million in sales during January to December 1972. 3) Each business also had at least 14 employees. These three criteria for inclusion narrowed the number of businesses to 92.

The following enterprises were added to the list of businesses: All the banks in the area because they met the net worth and employee criteria; the two largest savings and loan companies; The United Fund, with over two million in collections, was the single largest charity; The University Foundation, a group of business men who acquire land for the area's university; The Chamber of Commerce and the Jaycees were believed to contain economic elites; The County and State Boards of Education as well as the most important colleges and the university because of their control over millions of dollars of tax funds. The city council and mayor, the county board of supervisors, the two branches of the state legislature, and the governor with his forty appointed officials, the four largest law firms — with from 30 to 44 members each, the area's two energy companies and the telephone company rounded the list to 125.

The second type of data is the names of the top group of executives from each enterprise. The officers and directors were used for businesses of the corporate form. For the remaining enterprises
the top group of officials which most closely paralleled the officer/director status were used. Each of the enterprises had varying numbers of top officials; the number ranging from 2 to 12. All the officers/directors of the 125 enterprises totaled 1848 positions, or names. All names came from data sources of continuing reliability. (Arizona Department of Education 73, Dun & Bradstreet 73, Marquis 73, Martindale-Hubbell 73, Moody 73, Walker 73) The year ending December 1972 is the time period in which all the information and data was in effect.

Each person's full name, position, family-when available, and club affiliation was first collected on data sheets. Then all the information was transferred to 80-column punched cards for easy sorting and manipulation. The counter-sorter was used extensively to get the cards in the various numerical and alphabetical configurations; so straight interlocks, family interlocks, law firm interlocks, and club memberships could be counted and tallied.

ANALYSIS AND INTERPRETATION

All the gathered data was used to construct four individual matrices; one for each of the categories of interlock. Each matrix has the 125 enterprises or its two exes. Finally, any cell in an individual matrix tells the number of that particular kind of interlock between the two intersecting enterprises.

There are 137 individuals whose names appear on the list of officers/directors only two times. These show up on the straight interlock matrix as one interlock per pair. The following list is the names of the people representing three or more enterprises, thus constituting multiple interlocks in this first matrix.
FOUR INTERLOCKS:
O'Valley, Edward V.

THREE INTERLOCKS:
Eler, Karl
Nicks, Jess
O'Valley, Edward V. Jr.
Patrick, James E.
Smell, Frank L.
Speer, James G.
Tucker, Maurice R.
Trautman, Gerald H.

TWO INTERLOCKS:
Bisson, Walter R.
Cowden, E. Ray
Duesing, David L.
Garland, William T.
Hays, Richard
Hendline, Sherman
Hughes, James H.
Lundig, Walter T.
Molnar, Joseph T. Jr.
Miller, W. James
Moore, J. Lee
Ong, Walter
Shofstall, Weldon P.
Simmons, James P.
Singer, Paul L.
Smell, Richard
Stanley, Glen O.
Stoff, Fred R.
Talley, Franz G.
Williams, Jack
Williams, Robert D.
Worthington, Leslie B.

MAJOR POSITION
Chairman of the Board, O'Valley Lumber Co.
Vice President, ATAR Broadcasting Executive Vice President, Armour and Co.
Vice President, Arizona Bank
Vice President, Valley National Bank
Senior Partner, Smell and Wilmer Law Firm
Vice President, Hallcraft Homes
Chairman of the Board, Tanner Companies
Chairman of the Board, Greyhound Corp.
Chairman of the Board, Valley National Bank
Vice President, Valley National Bank
President, Armour-Dial
Chairman of the Board, Garland Steel
Superintendent of County Schools
Chairman of the Board, First National Bank
Vice President, Hughes & Ganz Cattle
Vice President, Valley National Bank
Vice President, Valley National Bank
Executive Vice President, Del B. Webb Corp.
Vice President, Arizona Public Service Co.
Vice President, W R G, Inc.
Superintendent of Public Instruction
President, United Bank/Financial Secretary, Board of Regents
Vice President, Hallcraft Homes
Vice President, C. S. Stptey Co.
Vice President, P B S W Corp.
Chairman of the Board, General Time Governor of Arizona
President, First National Bank
Vice President, Greyhound Corp.
These 31 people probably make up the core of the power network in the area. They represent 25 of the 30 largest and most important enterprises, as measured by net worth, sales or control of funds, and number of employees. Also 18 of these people belong to the Paradise Valley Country Club and 10 belong to the Phoenix Country Club.

The second matrix is constructed from 36 different family names. Sixteen of these family names appear only two times each on the officers/directors list. Twenty of them, however, appear three or more times. These family names, along with the enterprises they are associated with, are as follows:

<table>
<thead>
<tr>
<th>FAMILY NAME</th>
<th>NUMBER OF MEMBERS</th>
<th>ENTERPRISE TYPES AND NUMBER OF CONCNICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bimson</td>
<td>3</td>
<td>Bank-3, Philanthropy-1, College-1, Hospital-1</td>
</tr>
<tr>
<td>Campbell</td>
<td>2</td>
<td>Law Firm-1, Manufacturing-1, Wholesale-Sales-1</td>
</tr>
<tr>
<td>Driggs</td>
<td>6</td>
<td>City Government-3, State Government-1, Savings &amp; Loan-6</td>
</tr>
<tr>
<td>Fisher</td>
<td>2</td>
<td>Construction-2, Utility-1</td>
</tr>
<tr>
<td>Hazelton</td>
<td>3</td>
<td>Bank-3, Philanthropy-1, College-1</td>
</tr>
<tr>
<td>Isbell</td>
<td>2</td>
<td>Hotel-2, 2nd Hotel-3</td>
</tr>
<tr>
<td>Mitchell</td>
<td>3</td>
<td>Construction-1, State Government-1, Hospital-1, Law Firm-2</td>
</tr>
<tr>
<td>Lasson</td>
<td>3</td>
<td>Bank-1, Philanthropy-1, State Government-1</td>
</tr>
<tr>
<td>Lenz</td>
<td>2</td>
<td>Bank-1, Board of Regents-1, Manufacturing-1</td>
</tr>
<tr>
<td>Lewis</td>
<td>2</td>
<td>Hospital-1, Law Firm-2, Manufacturing-1</td>
</tr>
<tr>
<td>Lousia</td>
<td>3</td>
<td>College-1, Broadcasting-2, 2nd Broadcasting-1</td>
</tr>
<tr>
<td>Marclan</td>
<td>4</td>
<td>Bank-1, Construction-1, Chamber of Commerce-1</td>
</tr>
<tr>
<td>O'Kelley</td>
<td>7</td>
<td>Bank-1, 2nd Bank-1, Construction-1, Chamber of Commerce-1, College-1, Hospital-1, Retail Sales-6, Utility-1, Wholesale Sales-2</td>
</tr>
<tr>
<td>Shapiro</td>
<td>3</td>
<td>Construction-2, Wholesale Sales-2</td>
</tr>
<tr>
<td>Simmons</td>
<td>2</td>
<td>Bank-1, Philanthropy-1, Chamber of Commerce-1, Hospital-1</td>
</tr>
<tr>
<td>Small</td>
<td>2</td>
<td>Construction-1, 2nd Construction-1, College-1, Broadcasting-1, Law Firm-2, Utility-2</td>
</tr>
<tr>
<td>Staley</td>
<td>6</td>
<td>County Government-1, Savings &amp; Loan-1, Wholesale Sales-6</td>
</tr>
<tr>
<td>Tonnerr</td>
<td>4</td>
<td>Construction-3, Manufacturing-4, Savings &amp; Loan-1, Utility-1</td>
</tr>
<tr>
<td>Turley</td>
<td>2</td>
<td>Philanthropy-1, State House-1, Utility-1</td>
</tr>
</tbody>
</table>
The individuals represented by the family names here were confirmed by who's who volumes and by reliable informants, including a bank vice president. Also the vast majority of these families are on the third generation here, which is "old" for Phoenix. The more enterprises a family is connected with, the more interlocks they constitute. For example there are six Briggs represented here but they are only in three different enterprises and they constitute 11 family interlocks. They are seven O'Valleys involved in eight different enterprises and they constitute 67 family interlocks.

The family interlocks constituting this second matrix generally supplement and intensify the core of the power network established in the first straight interlock matrix. Not only the patriarchs but also the "old" families are generally connected with the biggest enterprises in the area. With the exceptions of Trautman of Greyhound and Iskel of Ramada Inns, the interlockers are long-time locals. The top positions are occupied by Bissom and Hazelton in the two largest banks, Briggs in the largest savings and loan, Mardian in construction, O'Valley in wholesale and retail construction materials, Snell in broadcasting, Snell in law, Nicks in meat packing, and Talley in light industry.

The third type of interlock is when two enterprises have the same law firm representing them. The Martindale-Hubbel (73) Law Directory lists all the law firms in the area as well as their institutional clients. There are 46 law firms with virtually thousands of clients. Each time a law firm lists 2 of the 125 enterprises as their clients, this counts as one interlock on the third matrix. Some firms
account for several interlocks. The law firm of Snell and Wilmer, for example, in some capacity represents 14 enterprises on the list. All together there were 167 law firm interlocks.

The fourth and last type of interlock is when two enterprises each have an officer/director who is a member of the same club. It has been documented (Moore 62, Dowhiff 70) that membership in clubs affords opportunities for individuals to serve their own as well as their employer's interests.

My informants told about the clubs in the area and got the membership lists. The four clubs are 1) The Paradise Valley Country Club, 2) The Phoenix Country Club, 3) The Junior League, and 4) The Arizona Country Club. This matrix building scheme can best be explained with an example. Among the officers/directors of The Valley National Bank there are 13 memberships in the Paradise Valley Country Club. And among the ranking officials of the state executive government there are 12 memberships in the Paradise Valley Country Club. Multiplying these two figures gives 182 as the theoretical interaction factor of one group with the other. One was subtracted from this because one of the memberships of both the bank and the government is the same person. The remaining 181 is now divided by 987, the total listed membership of the club, giving 0.183. The adjusted product of the club memberships is divided by the total club membership in order to compensate for the size of the club. That is, interaction possibilities are greater in a small club than in a larger one. Even though the membership lists for the Junior League are the wives and daughters of the officers and directors in question, the same arithmetic procedure was used for the Junior League as for the first and the two remaining clubs, arriving at three more figures. The four figures are then added giving 0.427 as the total for the appropriate cell of the fourth matrix.
At this point the composite matrix was constructed by summing the contents of the four individual matrices. It is a square symmetric matrix containing 15,625 cells. A computer program was devised that merged all the input data from the four matrices and printed out the results. Each of the five types of interlock was given a weight.

A straight-three person-interlock counts as one. A family relationship interlock counts as one-half. A law firm interlock counts as a quarter. And the club membership interlocks count as 1/387, 1/195, 1/686, or 1/812 respectively. The weights are estimates of the relative importance of the various kinds of interlocks. They could be changed as further research provided a rationale for assigning different weights to each type of interlock. As it stands, direct interests are the most important link.

Over 85% (107 out of 125) of the large enterprises in Phoenix are linked by one or more of the five types of interlocks. All banks, law firms and industries are linked, directly or indirectly, to each other as well as to educational, charitable, and governmental institutions. Of the 13 enterprises that are unconnected, two are in construction, two in manufacturing, six in real estate, five in retail sales, and three are in wholesale sales. The real estate firms not linked represent three quarters of the real estate firms in the sample.

The interim program not only printed out the final matrix but also it punched out the 428 data input cards for the smallest space analysis program. This program (G-L SSA-I) was slightly modified to handle our data and to be compatible with our computer (Univac 1110). The resulting plot has a phi of 0.0392. This means a good fit in two dimensions.
The plot, on the following page, presents the structure of the Phoenix power network. There is immediately visible a good tight circle of heavily interlocked enterprises. All the banks, all the law firms, and the two savings and loan associations are part of this inner circle, along with the city government and the executive of the state government. Around this center are 32 closely-related enterprises, with another 32 around the periphery. The eighteen enterprises having no interlocks do not appear on the display at all. They cannot be presumed to be any particular distance from the 107 or from each other. Further research and analysis is needed to see why these eighteen enterprises are not interlocked.

CONCLUSION

We have demonstrated an improved interlock and smallest space analysis methodology. And we have given data on the power structure cohesiveness in Phoenix. While the main emphasis has been methodological, some tentative conclusions are possible. All the financial, legal, and communications enterprises are in the center along with the executive branch of the state government. Also the city government is nearly central because of the mayor's interlock with Western Financial. In addition, the enterprises in the center have a mean annual sales of $222 million (not including banks and law firms) while those on the periphery have a mean annual sales of only $53 million. Tentatively, the Phoenix area can best be characterized by the monolithic power elite theories.

*The current mayor of Phoenix was a director of The Arizona Bank, a director of St. Luke's Hospital, and speaker of the Arizona state house.
DISCUSSION

This study only begins to reveal the possibilities using a smallest space analysis methodology. Several further studies immediately suggest themselves. For example, labor and middle class groups could be added to the data base to see if other cliques appear in the Phoenix network. A reputational study could be done following the suggestions of Edushin (68), to see if this interview method leads to similar results as the more “objective” method utilized here. Issue analysis or some combination of techniques might corroborate the findings. The prediction is, of course, that the same people and enterprises would turn out to comprise essentially the same power network.

In this study evidence did not emerge that there are countervailing pluralist groups in Phoenix. Other structures could have emerged, however, if other types of interlocks were considered. If campaign finance was used as a type of interlock then the state house and senate may have been central instead of the state executive government. If labor groups were included, countervailing power spheres may have emerged.

Using the techniques of this study, various power structure displays might emerge in other cities and regions. There could be displays with several cliques, displays with government separate from any clique (pluralism), or displays with government closer to some cliques than others. Displays of other places could reveal a wide range of possible power networks, showing other power theories to be more tenable in other areas.
REFERENCES


