



# Breadth and Depth of Unity among Chaebol Families in Korea\*

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*Despite grave concerns about the uneasy relationship between democracy and market economy in Korea, the question of how chaebol organize themselves has yet to be properly addressed. With network-analytic tools and data, we reconsider the prevailing notion of unified business elites. Specifically, we examine one of its social bases, the intermarriage network, and assess its structural properties. The evidence is mixed. In its shape, the network appears to be a mile wide and an inch deep: The cohesion is more extensive than intensive, and as a result, lacks the depth to robustly sustain its unity. We find, however, a local feature suggestive of nascent structuring.*

**Keywords:** Cohesion, Social Networks, Business Unity, Intermarriage, Chaebol

## INTRODUCTION: PRIVATE AFFAIRS, PUBLIC CONCERNS

The reception was swift, broad, and loud, when *Ch'amyöyönda* (People's Solidarity for Participatory Democracy), one of the most influential civic organizations in Korea, released its report on the intermarriage network among the chaebol families in 2004.<sup>1</sup> It was immediately picked up by most of the major newspapers, topping their front pages. Even now, more than three years later, the report is still being cited or reprinted in part in nearly a thousand sites on the web. The way it was received, however, had little to do with what it contained per se –

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<sup>1</sup> All translations from Korean originals into English are mine. In transliterating Korean names and words, I followed the McCune-Reischauer system, with usual exceptions, such as the trade names of corporate entities. Korean words in the plural (e.g., chaebol) are not followed by the letter "s."

especially the conclusion that, as one of the headlines put it, “They are all connected.” Not much in it was entirely new or unheard of. In fact, the issue has long been a favored staple in popular media, appearing in monthly and weekly magazines at regular intervals (e.g., Lee 1992; Park 1992). Rather, the reception had more to do with that it confirmed yet again what the public thought they had known all along.

One of the reasons for this preoccupation is the larger public implications these private affairs can have. Given the crucial role they have played in Korea’s recent history and the vast resources they command now, a grasp of the chaebol’s place is indispensable to understanding contemporary Korean society. In that regard, the question of who marries whom may – and, perhaps, should – be seen as a key part of the general question of how they organize themselves, which, in turn, leads to the questions of how they exercise their power and influence and how they shape society at large around them. As such, it is far more than a subject of idle gossip.

In press coverage of the topic, the metaphor of choice has been “a spider web,” with “far-reaching” and “tight-knit” being the adjectives customarily prefixing it. The metaphor seems quite apt on the surface and the notion of unified business elites has prevailed in much of the discourse on chaebol, especially among its ubiquitous critics. Having been repeated so often, for so long, and by so many, it is familiar and appealing, and hence, widely taken for granted as a social fact. However, conventional wisdom has its own momentum, and, once set in motion, it often keeps reproducing itself without being subjected to empirical scrutiny. Moreover, the notion of unified business elites is not limited only to the popular media. Found in many of the scholarly works on the issue is a parallel notion of the chaebol as a unitary actor: They assume *a priori* a collective actor – i.e., a group of actors, with closely aligned interests and well coordinated strategies, capable of acting concertedly as one. In doing so, these scholars in effect dispense with the question of how business elites organize themselves and skip to the next issues. The conclusions are mostly predictable, as they largely follow from the presumption they start with.

The analytical stance we take here offers a different view. It is, however, in no way to take the issue’s implications lightly. Rather, precisely because of them, we think it is all the more important to check the presumption critically and have it come to terms with the data and evidence. Using a set of network-analytic tools, we examine one of its social bases – the intermarriage network of the business elite families in Korea – and assess the existence, extent, and shape of the presumed unity. The long-standing debate in political sociology between the elitists and the pluralists on the existence of unity among elites – in particular, among business elites – informs the analysis substantively.

In the following section, we review the relevant lines of literature and situate them in the context at hand. The specifics of the research setting are presented next, followed by a description of the data and methods to be used. In the section on analyses and findings, we

examine the structural properties of the intermarriage network. The evidence is mixed. While we do observe that the network has a wide span, it lacks structural depth to robustly sustain its unity. In its current configuration, the network appears more centrifugal than centripetal. We find, however, a feature of the network that is suggestive of an emerging structure. In the last section, we conclude by considering these findings and their implications in the social and political contexts of contemporary Korean society.

## BUSINESS UNITY

The greater concerns underlying the debate on the power structure between the elitists and the pluralists were about how the rise of large corporations and the increasing concentration of economic power would affect the uneasy, if not precarious, coexistence of democracy and capitalism (for a review, see Berg and Zald 1978). Weber raised the question early on (Roth and Schluchter 1979), and more recently, Lindblom (1977: 356) concluded his treatise on the relationship between political democracy and market economy by stating, “The large private corporation fits oddly into democratic theory and vision. Indeed, it does not fit.”

However, since big businesses can use their political power either to compete with each other or advance their collective interests, it is only when they are both mobilized *and* unified that their political power can become formidable. Hence, among the most important factors affecting the relative political influence of business is, many argue, the extent to which they can work together politically (Berg and Zald 1978; Mintz 2002; Mizruchi 1992; Useem 1984; Vogel 1989). The key question, in short, is whether they can and do form the whole that is greater than the sum of its parts.

At the operational level, the question in the debate was if and how much unity existed among business elites. One side argued that they were highly unified (e.g., Hunter 1953; Mills 1956), while the other side noted the conflicts and divisions among them (e.g., Dahl 1967; Rose 1967). The empirical evidence gathered so far indicates that neither side was entirely right or wrong: Depending on the choices in what to look for and how to look at it, one could find little or much unity (Alford and Friedland 1985; Useem 1980). The focus of the debate thus turned to the questions of when and where unity could be found, and how it was achieved, emphasizing the contingencies and mechanisms of unity (Mintz 2002; Mizruchi 1992). Discussion on the mechanisms of business unity – often intersecting with that on the mechanisms of upper-class cohesion and mostly in the American and European contexts (e.g., Baltzell 1958; Useem 1984) – has produced a long list. Among those identified as facilitating unity are: common backgrounds and socialization experiences, membership in social clubs and policy-planning organizations, kinship and intermarriage, and most prominently, interlocking directorates (Domhoff 1974, 1978; Dye 1986; Mintz and Schwartz 1985; Mizruchi 1992;

Useem 1979).

In Korea, political economy has been the dominant approach in research on chaebol, with the primary focus on their roles in the process of economic development for the last few decades (e.g., Amsden 1989; Cho 1990; Jones and Sakong 1980; Kim 1997; Kim, Chang and Granovetter 2005; Woo 1991). Most of these studies see the state and the chaebol as running a three-legged race, in which the former is leading the charge and the latter – as a complicit, if not willing, participant – is playing second fiddle.<sup>2</sup> Of late, however, many observers note that the balance of power between the two actors is shifting, tipped largely by the chaebol's continued growth in terms of both scale and scope and its increased autonomy from explicit and direct state control (Eckert 1993; Kim 1997; Kim, Chang and Granovetter 2005).

The key role that the chaebol have played in this narrative gives rise to similar concerns about the larger issue of how democracy articulates with capitalism. These concerns might be even more keenly felt in Korea because of the compressed capitalist development and the turbulent history of democracy in it (Choi 1993; Kang 2002; Koo 2001; Lie 1998). Surprisingly, though, despite the fact that Korea's historical and social contexts of development have been quite different from those of others, which suggests that the Korean case might not sit well with the literature on business unity reviewed above, the case seems to have already been settled. The predominant, if not unanimous, view – both within the scholarly circles (e.g., Hong 1993; Kim 2007) and without (e.g., Lee 1992; Park 1992) – is that unity prevails, especially among big businesses. When their interest is defined chiefly in economic terms and their position delineated mainly vis-à-vis the strong state, the presumed oneness rings true. Also, as a stylized framing device, the presumption has been a convenient one with prima facie validity over the years. Consequently, most of the prior research is predicated on the notion of the chaebol as a unitary actor (ref. Coleman 1990: 504-507).

As we demonstrate in the following analysis, however, it is a matter to be empirically established, not a matter to be presupposed. Especially when the mechanisms for unity enumerated above are considered, the unity seems rather unlikely. In Korea, many of those mechanisms are found to be either absent (e.g., interlocking directorates), or only weakly developed (e.g., common socialization experiences, membership in social clubs and policy-planning organizations) (cf. Hong 1993; Kim 2007; Suh 1991). More, of course, is not necessarily better, since it is not often that diverse types of social relations line up to jointly influence solidarity and commitment (Gould 1995). Yet, in general, this paucity bodes poorly for unity. In such a setting, unity can be obtained only if and when the few mechanisms that remain available create the condition that allows the resources of and the connections in one relationship to be appropriated for use in others (Coleman 1988; Granovetter 1973, 1985).

Within the limited range of options left available to Korean business elites, intermarriage

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<sup>2</sup> Some also put the labor in the picture, on whose back the race had been staged (e.g., Kim 1997; Koo 2001; Lie 1998).

has been one of the few, if not the only, effective social mechanisms for unity. Anachronistic though it may seem, it blends business and family and creates connections linking the families (Brudner and White 1997; Goode 1959; Lisle-Williams 1984; Padgett and Ansell 1993; Schuby 1975; Zeitlin, Ewen and Ratcliff 1974). These linkages, when pieced together, constitute a network – a *connubium* – that can be analyzed structurally (e.g., Bearman 1997; Han 2003; Lévi-Strauss 1971). The question to ask, then, is *if, to what extent, and in what manner* unity is found in this network and what it implies. More specifically, is this network shaped in such a way as to provide a condition that is, at least potentially, conducive to unity among the business elites? We focus on two aspects of unity: breadth and depth. They register how wide and how tight the connections are in the network, respectively, which, in turn, denote the mobilization potential and organizational strength of the business elites as a whole.

## FAMILY BUSINESS NEXUS

*Chaebol* is a generic term referring to the large business groups in South Korea, such as *Samsung, Hyundai, LG, and SK*. Each consists of multiple firms, which, even though legally independent, are clustered and coordinated as a group and is owned and run by a family. While details may vary, these two characteristics – that they are large and diversified and that they are family-owned and family-controlled – are commonly used as criteria for operational definition of chaebol (see the review in Cho 1990: 28-39).

As an organizational form, business groups are found in a wide variety of settings (Granovetter 2005; e.g., Keister 2000; Khanna and Palepu 2000). Chaebol in Korea, however, are distinguishable in that they are largely the product of the rapid and massive capitalist development during the last few decades. As a result, they differ significantly from their Western counterparts in a few aspects. Historically, for one, there was no managerial revolution to speak of that separated corporate ownership from control (Berle and Means [1932]1968; Shin 1984; cf. Zeitlin 1974). For another, they have been operating in a sociocultural environment, in which one of the organizing principles is primacy of family relationships (Bell 1960; Ben-Porath 1980). Thriving family capitalism in Korea is the result of compounding of these two (Hamilton and Biggart 1988; Kong 1989).

Of the family relationships, mate choice has always been influenced by, and had consequences for, social class (Baltzell 1958; Goode 1959; Peach 1974; Whyte 1990). Within a stratified opportunity structure in general, unequal access to one another typically results in a distribution clustered by class, i.e., that of homogamy or class endogamy (Johnson 1980; Kalmijn 1994; Lee 2000). Under such conditions, intermarriage serves as a concrete indicator of the extent of social interactions within and between classes. In Korean society, therefore, with its cultural preoccupation on “appropriateness” in marriage (Kendall 1996) and its

corporatist notion of family (Lee 1977), and, as mentioned earlier, in the absence of alternative means of class cohesion, marriages – especially the ones between chaebol families – can and do signify far more than affairs of the heart.

### Issues

The research on chaebol families and their marriages has thus focused on the nexus of business, class, and family. Starting with the work of O (1975), many have examined the social background of their in-laws and concluded that chaebol families are connected, directly or indirectly, to families of power and influence as well as among themselves (Kong 1989). The class perspective has become more explicit lately (e.g., Suh 1991), with some suggesting that these marriages function as a device for class reproduction (Lee 1987) or environmental control (Hong 1993).

There are, however, a couple of caveats to consider in taking up this view of unity and the class perspective underlying it. First, as those who emphasize the historical process of class formation point out (Burawoy 1984; Thompson 1966), the means of production is only one of the many necessary factors in the making of social class. Also required are such non-economic factors as social relations, ideology, and organizations and institutions, which usually take longer to establish (Katznelson and Zolberg 1986). The fact that the sweeping social change Korea has experienced happened over a span of only a few decades is highly pertinent in this regard. In fact, some argue that it is only recently that social and cultural signs of stable class structure have begun to emerge in Korea (Chang 1998; Shin 1994).

Second, the private nature of the information necessary for research – i.e., that of *who marries whom* – severely handicaps the quantity and quality of the data one can rely on. There is no single source that is comprehensible and reliable. As described earlier, the issue of intermarriage between chaebol families has been a subject repeatedly and voluminously written about in the popular media, and it is from their coverage that many researchers cull the source materials. These items are, however, largely anecdotal and quite fragmented, and have to be treated with caution. In much of the research, though, the ways in which they were collected and processed have been haphazard and precipitate, rendering the analytical leverage of the data even more limited (see Table 3-1-1 in Kong 1989: 60-61). In addition, since unity is a global structural property of a network, the data have to be pieced together in a manner that can sustain the analysis at the appropriate level of aggregation (Lieberson 1985: 88-119).

The advances in addressing these problems came in fits and starts. For data, Kong (1989) proposed a more systematic design for data collection; yet it was only partially implemented in her own study. The main breakthrough was the series in *The Seoul Kyöngje Sinmun* (The Seoul Economic Daily) in 1990 and 1991.<sup>3</sup> Following the traditional format of covering one chaebol

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<sup>3</sup> The series was titled, *Chaebölgwa Kaböl* (Chaebol and Family Dynasty), and, by popular demand, was published

family at a time, they compiled data for the fifty largest chaebol, setting a benchmark. It was later supplemented and updated in the report by *Ch'amyöyönda*e in 2004.<sup>4</sup> Most recently, in the special series, "Power Elites in Korean Society," by *The Chungang Ilbo* (The Joong Ang Daily) in 2005, a large online biographical database was tapped for data.<sup>5</sup> In short, data have been improving over the years in terms of both quantity and quality.

The improvements in data, however, were not accompanied by those in theoretical framework and analytical strategy. Kong's (1989), for instance, was closely in line with the earlier research. While she alluded to it at times, there was no system-level analysis that directly examined the intermarriage network as a whole. The series by *The Seoul Kyöngje Sinmun* (1991) was similar in that they did not connect the pieces and assemble them into a larger picture. In the report by *Ch'amyöyönda*e, an attempt was made for the first time to map the overall intermarriage network (Kim et al. 2005). The chart they provided (see, for example, <http://img.hani.co.kr/section-kisa/TOPIIMAGE/bride.html>) was substantial enough to make their point on the connection between the rich and powerful, reaffirming the conventional wisdom. Yet, it was only a partial representation of the overall picture, which was not analyzed at the system level. Lastly, although some network-analytic techniques were introduced, the report by *The Chungang Ilbo* too stopped short of addressing the question of unity directly (Lee, Chang and Ghim 2006).

On the whole, the conclusions from these reports and studies keep reiterating the prevailing view, which is tentative at best, if not tenuous and problematic. And, despite all the advances, the question of unity as we formulate here still remains open. What we hope to do in this paper are to take advantage of these developments, to improve upon them if possible, and to bring them to bear on the question directly.

## DATA AND METHODS

### Network Data

We begin with the data compiled by *The Seoul Kyöngje Sinmun* in 1990 and 1991, as reported in the volume, *Chaebölgwa Kaböl* (1991), in which fifty-two chaebol families and their marriage networks are reported. Shown in Figure 1 are two examples. In the upper left box is the network of *Samsung's* Lee family (tagged as #26) and in the bottom right box is that of *Hyundai's* Chung family (#41). As emphasized by the report, that they are married to political

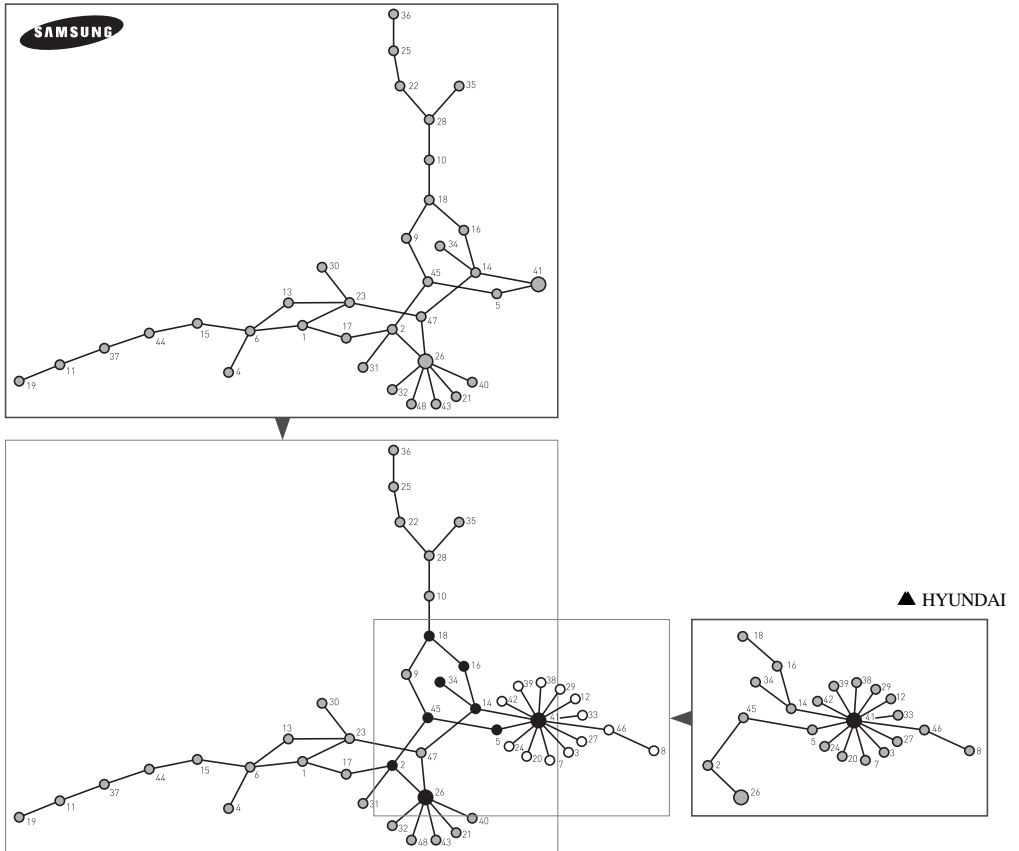
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as a book afterward (1991).

<sup>4</sup> The report, "Personal Network of Korean Chaebols," was later included in a five-volume publication, *The Chaebol of Korea* (Kim et al. 2005).

<sup>5</sup> They focused on the ties between individuals rather than between families, and their concerns were broader, encompassing power elites in general from a wider range of sectors and examining various kinds of relationships. The expanded version of the series was also published as a book later (Lee, Chang and Ghim 2006).

Figure 1. Marriage Networks of Samsung's Lee Family and Hyundai's Chung Family



Notes | Redrawn from the charts in pages 21 and 41 of *Chaebolgwa Kabol (The Seoul Kyongje Sinmun 1991)*, respectively.

as well as business elite families is clear. The Lee family, for instance, is directly connected to families of a cabinet minister (#47) and a provincial governor (#21), and indirectly to families of a prime minister (#14) and a mayor of Seoul (#23) in two steps. The Chung family can even be linked to a president's family (#18) in three steps. Also notable in these networks are business elites, including other chaebol families – for instance, *Kolon* (#28), *Daelim* (#31), *Doosan* (#17), and *SK* (#44) in *Samsung's* network, and *LG* (#2) in *Hyundai's* network.

While much can be gleaned from these networks, they are presented separately for each chaebol, and as such do not facilitate a system-level analysis. Note that the two networks in Figure 1 overlap substantially with each other: Nine families that appear in the network of the Lee family of *Samsung* also appear in the network of the Chung family of *Hyundai*. When the two networks are pieced together, as in the bottom left corner of Figure 1, these families

(colored in dark black) serve as junctures in coupling the two. The result of this step is a larger network, in which the families shown in the two networks are linked up as one. It is precisely the shape of this conjoined structure as a whole – generated by iteratively applying this step for all the chaebol families – that the question of unity concerns.

We expanded and updated this initial dataset in two ways. First, we increased the number of chaebol families that anchor the data from 52 to 58. Since the former was obtained from the list of the fifty largest chaebol as of 1990/1991, it did not reflect the changes since then. To bring it up to date, we examined the annual lists of thirty largest business groups, published by the Fair Trade Commission (FTC), from 1987 to 2006. Of the business groups that made the list at least once during the period, six met our inclusion criteria and were newly added.<sup>6</sup> Second, in order to supplement and validate the initial data, we surveyed and consulted additional sources, including three monographs, nine periodicals (five monthly and four weekly news magazines – contributing 141 and 43 articles, respectively – that contained relevant items), two daily newspapers (60 articles), two webzines (13 articles), and five online biographical databases.<sup>7</sup> Through these steps, we were able to augment the initial dataset significantly, increasing, for instance, the number of marriages included in the analysis by more than twenty percent.<sup>8</sup>

The final dataset is constructed by starting from these fifty-eight chaebol families – i.e., cognate groups centered around the chaebol founders – and snowballing successively to add all the other families that can be traced through marriage (Berg 1997; Goodman 1961; Wasserman and Faust 1994). In all, the data we assembled for analysis consist of 916 families, including fifty-eight chaebol families, and 1,002 uniquely identified marriages that link them. They are put together to form a 916-by-916 matrix, in which each cell,  $c_{ij}$ , indicates presence, 1, or absence, 0, of a marriage tie between family  $i$  and family  $j$ . Given the principle of exogamy, the diagonal cells,  $c_{ii}$ , are set to 0, and since we treat marriage ties as symmetric,  $c_{ij}$  is set equal to  $c_{ji}$ .<sup>9</sup>

Although this is by far the most comprehensive dataset yet on the topic, there are two methodological concerns regarding the manner in which it is constructed. One is the concern about what the data might be leaving out. Since no clearly definable population frame existed (Wasserman and Faust 1994: 32-33), it was not possible to follow the standard procedure. As a

<sup>6</sup> Based on total asset, seventy-one business groups make the list at least once during the period. When the groups that are not family-owned and family-controlled (e.g., *Kia* and *POSCO*) are excluded and their family affiliations are ascertained (e.g., *Hansol*, *CJ*, *Shinsegae*, and *Saehan* are related to *Samsung*), the list narrows down to fifty chaebol families, thirty eight of which are already accounted for by the existing data. Among the remaining twelve, relevant data are available for six of them.

<sup>7</sup> The complete list of source materials can be found at <https://netfiles.uiuc.edu/skh/www/sources.pdf>.

<sup>8</sup> When duplicates are accounted for, the total number of marriages in *Chaebölgwa Kaböl* (*The Seoul Kyöngje Sinmun* 1991) was 832, and that in the report by *Ch'amyöyönda* (Kim et al. 2005) 815. The raw number of marriages we had before the application of snowballing procedure below was 1,143.

<sup>9</sup> There were only four cases affected by this simplifying operation, in which two ties existed between a pair of families. After the operation, hence, the effective number of ties in the binary matrix is 998 (= 1,002 - 4).

**Table 1.** Estimates of Population Size

	Estimates	Standard Errors (Jackknife)
$\hat{v}_1$	554.0	29.2
$\hat{v}_3$	1646.1	197.2
$\hat{v}_5$	914.7	129.2
Observed	916.0	

Notes | For technical details, see Frank and Snijders (1994).

The program, SNOWBALL, is available at <http://stat.gamma.rug.nl/socnet.htm>.

result, despite the substantially expanded coverage, we were still limited by what the available source materials could afford. That we are at risk of relying on data that are less than complete is of heightened importance here, since network analysis – with its focus on interdependencies and structural features – is more sensitive to the problem of omission of pertinent elements (Laumann, Marsden and Prensky 1983; Marsden 1990). We thus appraised the extent of the problem by using a method developed to estimate the size of hidden populations.<sup>10</sup> In Table 1 are the results obtained from various estimation procedures (for technical details, see Frank and Snijders 1994).<sup>11</sup> The estimate of choice,  $\hat{v}_5$ , is strikingly close to what we have in the data, allowing us to be confident that the data at hand are not too far off the mark.

The second concerns the reverse possibility that the data might have taken in too much. The marriages included in the data are obtained from various sources spanning almost forty years, and among the marriages that can be dated, some are as early as 1917, while others as recent as 2005.<sup>12</sup> In other words, the data as a whole are cumulative over time, the probable effect of which is that the observed degree of connectivity in the data is likely to be higher than that of the network that consists of contemporaneously active ties only. Note, however, that the bias is in the direction of overstating the case for unity, and thus works against the critical stance we take.

### Measuring Cohesion

Given the nature of the research questions and the data, we rely on network-analytic methods

<sup>10</sup> That we have compiled the data by snowballing and that the marriages directly involving chaebol families are thoroughly covered render the application of these estimation procedures appropriate (Frank and Snijders 1994).

<sup>11</sup> Among them,  $\hat{v}_3$  and  $\hat{v}_5$  are favored by Frank and Snijders (1994) over  $\hat{v}_1$ . Between the two, they note that  $\hat{v}_3$  may be biased, and that, if  $\hat{v}_3$  and  $\hat{v}_5$  yield very different outcomes,  $\hat{v}_3$  is not reliable.

<sup>12</sup> We were able to date only 17 percent of the marriages.

for measurements and tests. They allow us to examine structural features of the network as a whole, to explore their theoretical implications, and most importantly, to properly address the question of unity.

Specifically, many have discussed the role of cohesion in the social network literature. Friedkin (1984), for example, examines the use of cohesion as an explanatory variable in sociological theories, especially in describing the emergence of consensus among members of a group (also see Collins 1988; Erickson 1988). While intuitively appealing, the concept is quite general and multifaceted. Thus we employ a range of measures to capture different network properties that are related to the cohesiveness of group (Freeman 1992). Broadly, we focus on two sets: one that deals with the breadth and the other the depth of unity. For the former, we consider the number and size of components, which measure the extent of overall cohesion. For the latter, we consider the measures based on the length and number of connections, which indicate the strength of cohesion. Lastly, we examine the local clustering to gauge the potential likelihood of cohesion.

Throughout the analysis, the results we obtain from the data will be compared against a baseline. It is constructed by generating a batch of networks with the numbers of families and marriages set equal to the observed values, and the presence or absence of ties between families independently and randomly determined from a Bernoulli distribution (Wasserman and Faust 1994: 528). This baseline provides a theoretical reference of what is to be expected if the same number of marriage ties are randomly and independently distributed among the same number of families. Also, when possible, we compare the results to the other networks in terms of their structural properties.

## **ANALYSES AND FINDINGS**

The substance of the unity argument rests on the conjunction of two propositions with regard to the structural properties of the network: One has to do with how extensive it is and the other how intensive it is. Operationally, the former concerns the breadth, the latter the depth of cohesion. The two phrases that have often been used to describe the intermarriage network of chaebol families in Korea, “far-reaching” and “tight-knit,” are quite fitting, albeit loosely, in that sense. As we argued, to what degree these two materialize is a question to be addressed empirically with the data. In addition, whether or not the two jointly obtain is an analytically separate question to be answered, for the two do not necessarily move in tandem. We address these questions below.

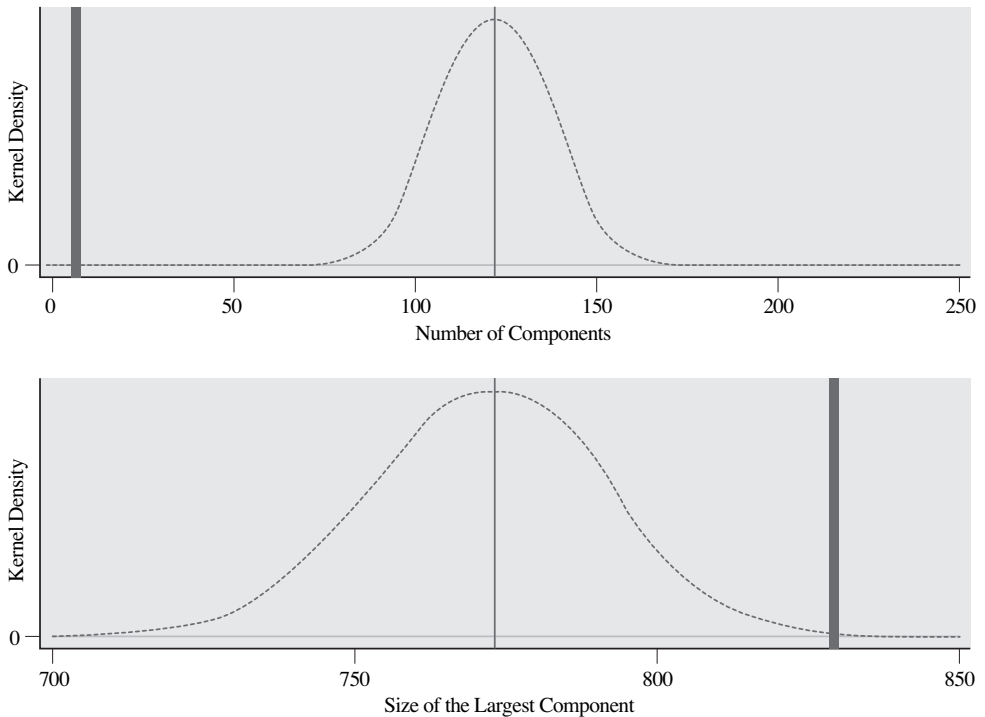
### **Breadth**

One way to gauge the breadth, or the reach, of the network is to link up all the families that are

connected by marriage ties. When the families in the data are traced successively through the chains of marriage ties, they aggregate up to six components. That is, we find six discrete sets of families that are connected by at least one path – however long and circuitous the path may be – within each set (Wasserman and Faust 1994: 109-110). Given the large number of families in the data, that they break off to only six components may be taken as an indication of low level of fragmentation, and conversely, high level of cohesion. Yet, absent a pertinent metric, it is not possible to evaluate how high – or, for that matter, how low – this is. Presented in the top panel of Figure 2 is the distribution of number of components obtained from the simulation, which centers on 121.5, with the 95% confidence interval ranging from 119.1 to 123.8. The observed number of components, six, is minuscule compared to these figures ( $t = 97.26, p < .001$ ). To put it another way, the level of cohesion observed by this measure is significantly higher than what can be expected from the baseline.

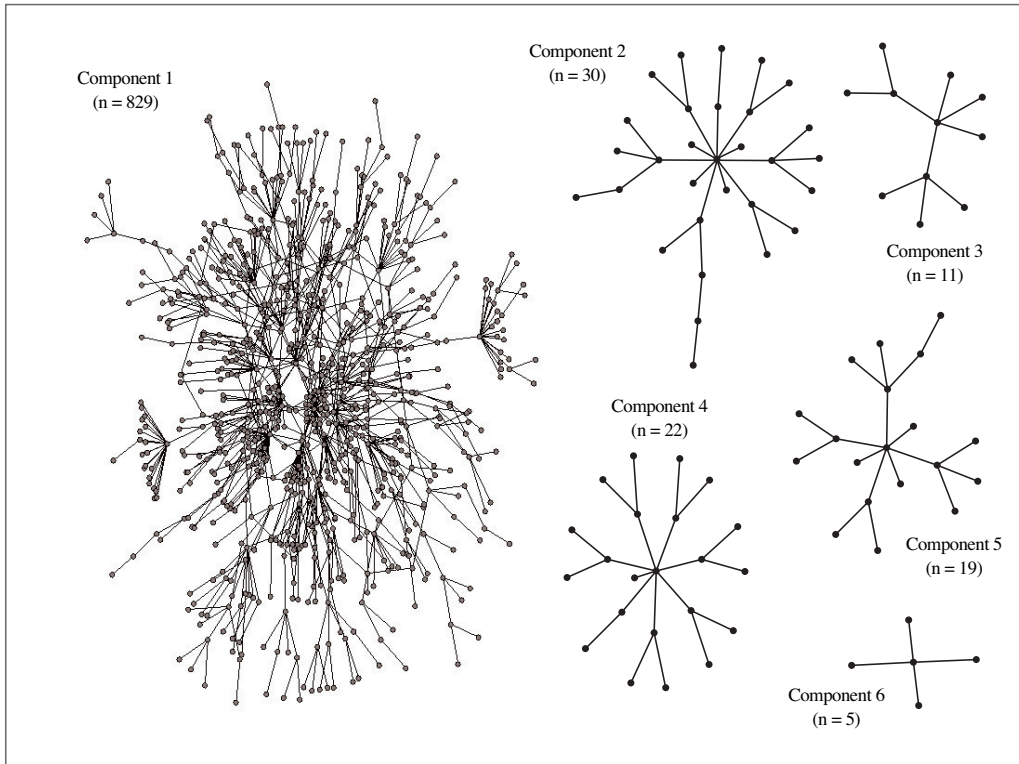
Shown in Figure 3 are the six components, providing a sense of the overall shape of the network. What is clearly noticeable is how heavily concentrated these families are. More than

**Figure 2.** Number of Components and Size of the Largest Component: Observed and Expected



Notes | Dashed, gray lines are based on the simulation results. The baseline means are indicated by thin vertical lines. Thick, dark lines mark observed values.

Figure 3. Six Components



Notes | Figures are drawn using NetDraw in MDS layout with node repulsion and equal edge length bias (Borgatti, Everett and Freeman 2002).

ninety percent of the families (829 of the 916 families) belong to the main component, i.e., the largest component. Compared to the main component, the other five components are much smaller in size, ranging from five to thirty.<sup>13</sup> Again, as illustrated in the bottom panel of Figure 2, the observed size of the main component is far greater than what can be expected from the baseline, where the mean estimate is 771.3, with the 95% confidence interval bracketing it

<sup>13</sup> As expected from the way the data are collected and compiled, each of these smaller components takes the form of hub and spoke with varying degrees of complexity. Anchoring these are *Ch'oe T'ae Söp* family (*HanGlas* Group) for Component 3, *Kim Tu Sik* family (*Sammi*) for Component 4, *Kim Hyang Su* family (*Anam*) for Component 5, and *Kim Chae Ch'öl* family (*Dongwon*) for Component 6. Component 2 is also anchored by a chaebol family (*Paek Uk Ki* family of *Tongkook Trade*), yet has another chaebol family (*Kim Ŭi Ch'öl* family of *New Core*) attached at the margin. As to why these chaebol families lack connections to the big-name in-laws in the main component, various ad hoc reasons have been given. Leading the list is the allegedly liberal attitude with regard to mate selection among these families. Also included are region for *Paek Uk Ki* family and religion for *Ch'oe T'ae Söp* family (*The Seoul Kyöngje Sinmun* 1991). These bear little on the structural dynamics of the overall network. The discussion below, hence, focuses on the main component.

between 768.0 and 774.5 ( $t = -35.19, p < .001$ ). Both the number of components and the size of the main component indicate that these families are significantly more broadly connected than what one may expect from the baseline. And, to that extent, the findings give credence to the popular perception of the high level of cohesiveness.

### Depth

The component, however, is only a partial indicator of unity. In order to test how robustly the network is connected, we consider two additional structural criteria for cohesion – the length and number of connections. First, we examine the distribution of shortest path, i.e., geodesic, connecting each pair of families in the main component. Table 2 shows that more than half of these paths are seven steps or longer. At the extreme, four of the pairs require as many as sixteen steps to connect. Since the distance between the two actors is inversely associated with their likelihood of being aware of, or being affected by, each other, these distant paths are to be taken with caution (Burt 2000; Friedkin 1983).<sup>14</sup>

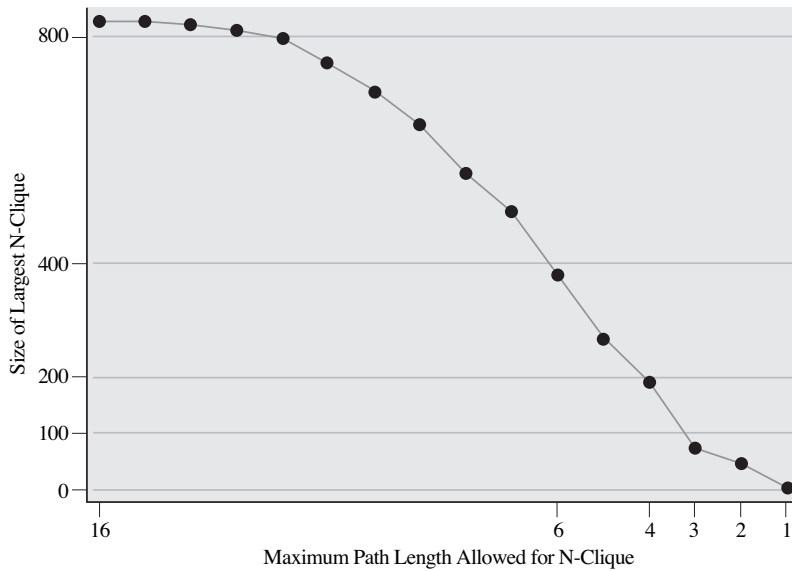
To take into account the variation in path length, we gradually increase the required level of

**Table 2.** Length of Geodesic Paths in the Main Component

Path Length	Frequency	Percent	Cumulative Percent
1	916	0.3	0.3
2	5,283	1.5	1.8
3	15,685	4.6	6.4
4	34,245	10.0	16.4
5	51,661	15.1	31.4
6	61,521	17.9	49.3
7	58,622	17.1	66.4
8	46,833	13.6	80.1
9	32,643	9.5	89.6
10	19,357	5.6	95.2
11	10,338	3.0	98.2
12	4,519	1.3	99.5
13	1,300	0.4	99.9
14	254	0.1	100.0
15	25	0.0	100.0
16	4	0.0	100.0
$\Sigma$	343,206	100.0	

Notes | The total number of paths (343,206) is from  $N \cdot (N - 1)/2$ , where  $N$  is 916.

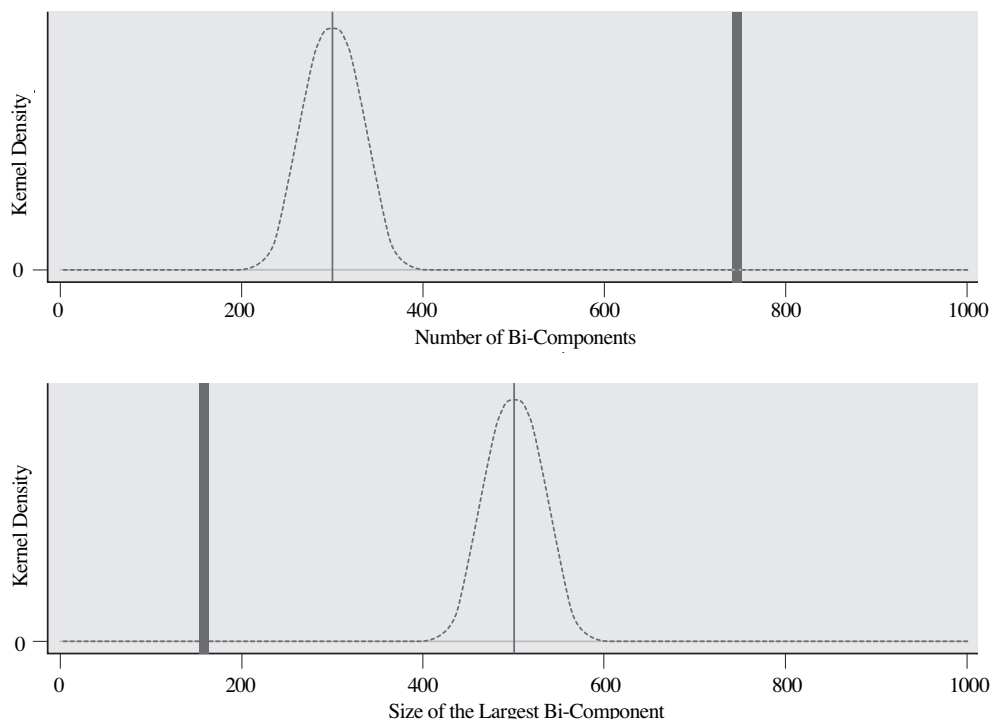
<sup>14</sup> See, for example, the discussions of “decay function” in Burt (2000) and of “horizon of observability” in Friedkin (1983).

**Figure 4.** Size of the Largest  $N$ -Clique

Notes | An  $n$ -clique of an undirected graph is a maximal subgraph in which every pair of vertices is connected by a path of length  $n$  or less (Borgatti, Everett and Freeman 2002; Wasserman and Faust 1994).

connectedness by incrementally bounding the maximum allowed and see how it affects the size of the main component. The result is reported in Figure 4. When the cut-off is set at the proverbial “six degrees,” which is near the mean path length (6.66), and the paths longer than that are taken out, the size of the connected group shrinks by more than half, to 381 from the initial size of 829. Tightening it further down to four halves the group size yet again to 189. At two removes (in-laws of in-laws), where occasional face-to-face social interactions can be reasonably expected, the size is only 43.

Second, we impose another, more stringent, criterion for connectedness in terms of the number of paths. In obtaining the components in Figure 3, two families are treated as members of the same component if there is at least one path connecting them. When the minimum number of paths required is increased to two, we obtain *bicomponents*. That is, to be considered connected in a bicomponent, a pair of families have to be reachable to and from each other through at least two independent paths. In Figure 5, we compare the observed values to the expected values from the simulation. In the top panel is the baseline distribution of number of bicomponents, which centers on 297.7. In contrast to the results obtained for the components in Figure 2, the observed number of bicomponents, 751, is far greater than the baseline ( $t = -207.49, p < .001$ ). Similarly, the bottom panel shows that the difference in size of largest bicomponent is in the opposite direction as well: The observed value, 159, is far smaller

**Figure 5.** Number of Bicomponents and Size of the Largest Bicomponent: Observed and Expected

Notes | Dashed, gray lines are based on the simulation results. The baseline means are indicated by thin vertical lines. Thick, dark lines mark observed values.

than the expected value of 498.6 ( $t = 131.16, p < .001$ ).<sup>15</sup> The results reported in Table 2 and Figure 4 above as well as those in Figure 5 make it clear that the disproportionately large size of the main component is greatly overstated by the ties that are too far removed and thus likely to be of little substantive significance. In sum, with regard to the structural shape of overall cohesion, the network seems wide in its berth, yet perched on a rather narrow and frail pedestal.

### Structure at the Local Level

As the last step, we examine a different structural property of the network. The comparisons against the baseline presented thus far repeatedly and strongly bear out the general conclusion that the marriage ties in the observed network are neither independently nor randomly distributed. Examining the specific ways in which these ties deviate from what is expected by the baseline is of concern here, for they may suggest nascent structuring in the network. In

<sup>15</sup> All the other bicomponents were of size 2 (749 bicomponents) or 3 (1 bicomponent).

particular, we focus on local clustering, which refers to the extent to which each actor is embedded in a cohesive local setting – i.e., the extent to which in-laws of a family are also in-laws to each other. Our theoretical interest is in what it implies for the cohesion of the network as a whole. Locally clustered networks, or, “small-world” networks, can easily and quickly obtain high levels of overall cohesiveness with the introduction of a few long-range connections, called “short cuts” (Watts 1999; Watts and Strogatz 1998). Especially, in sparse networks, like the one we are analyzing, these short cuts can drastically reduce the distance not just between the pair of vertices that they connect, but between their immediate neighborhoods, neighborhoods of neighborhoods, and so forth.

Shown in the top panel of Figure 6 is the baseline distribution of clustering coefficient, which centers on 0.0023, with the 95% confidence interval ranging from 0.0019 to 0.0028.<sup>16</sup> The observed clustering coefficient from the intermarriage network data is 0.0191. Although not as high as the ones reported in other contexts (e.g., Watts 1999), it exceeds what is expected from the baseline by an order of magnitude ( $t = -76.08$ ,  $p < .001$ ).<sup>17</sup> In the bottom panel is the comparison in terms of how dispersed local clustering is. Measured by coefficient of variation, the observed network shows a far smaller variation ( $\text{CoV}(C_i) = 6.19$ ,  $t = 19.84$ ,  $p < .001$ ), and thus a more evenly dispersed distribution. Together, these results suggest that a significantly higher level of local clustering is present throughout the network. This can be seen as a telltale sign of structuration, albeit on a small scale and at a local level, which portend a high potential for system-wide integration and mobilization (Burt 1992; Granovetter 1973).

## DISCUSSION AND CONCLUSIONS

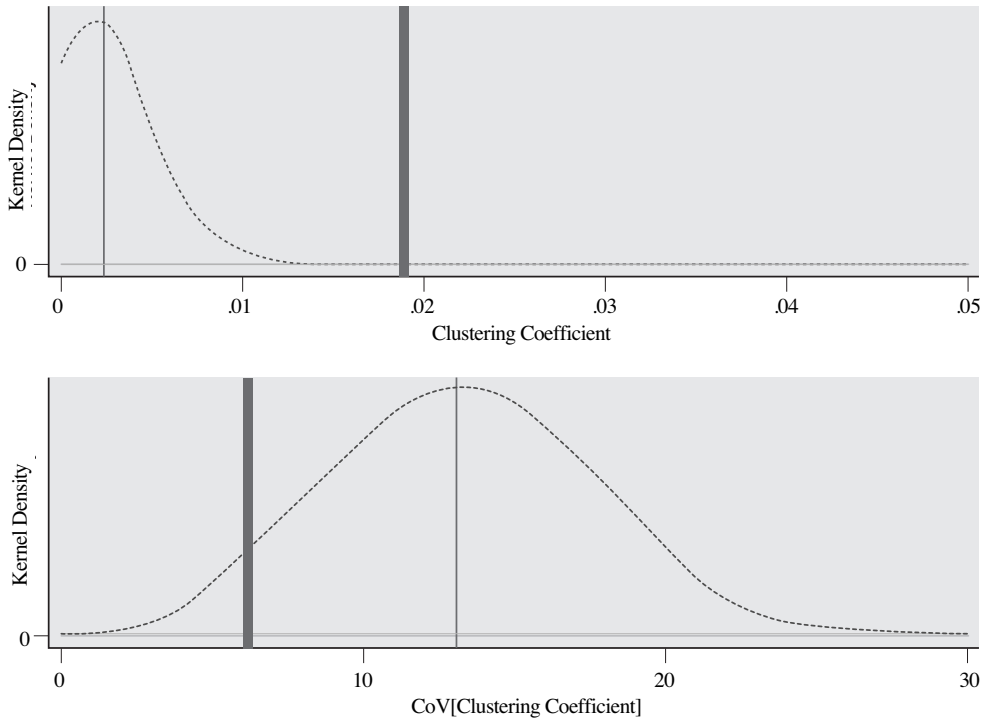
### Remaining Challenges

The study is to be extended in a number of ways. Whereas the focus of this paper was on the overall shape of the network, we plan to turn to local structures next. As suggested in the last part of the analysis, they hold much promise in showing us where the alliances and fissures lie within the network (see Han 2007). For a more complete mapping of unity, we also plan to broaden the range of ties we take into account. In particular, ties through joint membership in formal organizations, such as *The Federation of Korean Industries*, will be examined (Hong

<sup>16</sup> The clustering coefficient  $C_i$  for family  $i$  is the proportion of ties between the families within its neighborhood divided by the number of ties that could possibly exist between them. Thus, it ranges from 1, if every neighbor connected to  $i$  is also connected to every other family within the neighborhood, to 0, if no family that is connected to  $i$  connects to any other family that is connected to  $i$ . The clustering coefficient for the whole system,  $C$ , is the average of the clustering coefficient for each family. A network is considered a “small-world” network, if  $C$  is significantly higher than a random network constructed on the same set of families (Watts and Strogatz 1998). In Newman (2003), this is referred to as the original version.

<sup>17</sup> For instance, this is far lower than what Watts found among the movie actors (1999: 515). Given the vastly different basic parameters ( $n$  and  $k$ ), however, the comparison is to be made cautiously.

**Figure 6.** Clustering Coefficient and Its Variance: Observed and Expected



Notes | Dashed, gray lines are based on the simulation results. The baseline means are indicated by thin vertical lines. Thick, dark lines mark observed values. For variance, coefficient of variation is used.

1993; Kim 2007; Suh 1991). A comparative perspective is of interest too, which will show various possibilities of articulating unity (e.g., Gerlach 1992; Taira and Wada 1987; Yanaga 1968; Zeitlin, Ewen and Ratcliff 1974).

There remain at least two critical analytical challenges. One has to do with history and dynamics. By taking a snapshot of the network, the analysis presented here flattens the historical aspect of the network formation. In theory, at least, information on the timing of marriage will let us see the process unfold over time. At the moment, though, we have yet to discover a practical way to overcome the limitations imposed largely by the data availability. The issue, however, is more than just a matter of technicality. Without an understanding of the dynamic process that produced the network, as in Padgett and Ansell (1993), it is difficult to see what it holds for the future. This is particularly so in the contemporary Korean context, where the repercussions of the massive and rapid changes over the last few decades are only beginning to be felt. What we have observed here might only be the beginning of what is to come.

The other is the actual consequences of these relations and the network they comprise (Burris 2005; Mizruchi 1996; Stinchcombe 1990). Much of the critical discussion on chaebol and their connections through marriage in Korea, for example, converges on the issue of collusion, particularly that with the political elites (Hong 1993). However, a framework that can link the two reliably given the constraints is yet to be devised (cf. Carruthers 1994; Padgett and Ansell 1993). Related to this issue at another level is the question of whether these ties are just by-products of social interaction or calculated moves for strategic alliances (Gould 1995). We will have to strive in all three fronts – data, method, and theory – to address these issues.

### **A Sense of Proportionality**

To understand Korea's recent history and contemporary society, a grasp of the chaebol's place in them is indispensable. In that regard, the widely-held presumption of unity among the business elites in Korea has important implications in practice as well as in theory. In this paper, with a set of network-analytic tools, we took a fresh look at the issue by examining one of the social bases of unity – intermarriage – among them and assessed the evidence on its existence, extent, and shape. The claim that the rich and powerful are all connected by marriage around the chaebol families seems to have a kernel of truth on the surface. However, the support for the cohesion of the network as a whole – oftentimes pictured as a cabal by the critics of chaebol and echoed in the popular media – was far less than what the prevailing narratives had us believe. In its shape, the network appears to be a mile wide and an inch deep: The cohesion is more extensive than intensive, more centrifugal than centripetal, lacking the depth to sustain its structural unity robustly. There are, though, some signs at the local level, which suggest an emerging structure with a potential for global integration and mobilization.

Our focus in addressing the concern was on empirically ascertaining the unity among chaebol. What we find is neither a tightly coordinated unitary actor nor a muddled mass. As many have observed, with the resources, power, and influence they individually have, the sum of these parts is great enough to raise concerns. However, the parts do not quite seem to cohere yet to produce the whole greater than the sum of its parts. What do these mixed findings mean in the context of the concerns raised earlier with regard to the relationship between political democracy and market economy?

On the one hand, it means that they are not as formidable as they could be. In this sense, the situation closely mirrors that of the United States during the 1960s and 1970s. Perrow, after compiling and reviewing the New Left's critical arguments from a rather sympathetic point of view, suggested that too often they assumed "a coherent, integrated, and rational system where there is only a loose, shifting, and partial system" (1972: 267). This is precisely the diagnosis we offer in this paper, which suggests a corrective measure for disconnects in the popular perception.

On the other hand, though, the fundamental concerns remain intact. First of all, in

presenting the imbalance between the breadth and depth of unity as the central finding of the analysis, we are very much aware of their individual power and influence. What we are emphasizing, instead, is that if and when they do organize themselves into a coherent whole, the situation will change qualitatively. They could become far more formidable than what they appear now. Precisely for that reason, we think it is imperative not to take for granted what has thus far been presupposed complacently. The shift in the balance of power between the state and chaebol of late is yet another reason to be mindful of this possibility.

In conclusion, to those who are concerned about the larger issue of democracy and capitalism in Korea, the finding offers a crucial factor to take into account in assessing the current situation and in looking ahead into the future. We suggest that these earnest concerns will be better served by careful analyses of the evidence, which, in the end, will lead to more effective strategies to cope with the issue.

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