Lecture 11. Networks, Social Capital, Autonomy, and Achievement

Summarized by Laura Stetson, Xiaohui lu, and Kuang-Yuan Huang


This chapter talks about something about the structure of the player’s network and the location of the player’s contacts in the social structure of the arena provides a competitive advantage in getting higher profits.

Three kinds of capital a player brings

- Financial capital
- Human capital – Natural qualities and skills
- Social capital – Relationships with other players, through which player receives opportunities to use financial and human capital.

Social capital is different from the other two

- Social capital is a thing owned jointly by the parties to a relationship. No one player has exclusive ownership rights to social capital.
- Social capital concerns rate of return in the market production equation. Through relations with colleagues, friends, and clients come the opportunities to transform financial and human capital into profit.

Social capital is the final arbiter of competitive success – Success is determined less by what you know than by whom you know.

Something about the structure of the player’s network and the location of the player’s contacts in the social structure of the arena provides a competitive advantage in getting higher rates of return on investment.

Two routes into the social capital question.

- Social contagion analysis: Network structure is not used to predict attitudes or behaviors directly. It is used to predict similarity between attitudes and behaviors.
  - Social capital theory in this line of work describes the manner in which resources available to any one person in a population are contingent on the resources available to individuals socially proximate to the person.
- Social structure as capital in its own right. This line describes how networks are themselves a form of social capital.

**Information benefits** – define who knows about these opportunities, when they know, and who gets to participate in them. Players with a network optimally structured to provide these benefits enjoy higher rate of ROI. It occurs in three forms:

- Access: receiving a valuable piece of information and knowing who can use it. (Players are unevenly connected with one another)
- Timing: personal contacts get significant information to you before the average person receives it.
- Referral: personal contacts get your name mentioned at the right time in the right place so that opportunities are presented to you.
As a result, a player with a network rich in information benefits has contacts:

- Established in the places where useful bit of information are likely to air
  - Everything else constant, a large, diverse network is the best guarantee of having a contact present where useful information is aired – nonredundant information is transmitted.
- Providing a reliable flow of information to and from those places
  - The issue of trust. Strong relationships and mutual acquaintances tend to be developed between people with similar social attributes such as education, age or income and the two factors are linked to trust.

**Structural Holes** – connect nonredundant contacts.

- A structural hole is a relationship of nonredundancy between two contacts.
- As a result of the hole between them, the two contacts provide network benefits that are in some degree additive rather than overlapping.

Conditions that indicate a structural hole: cohesion and structural equivalence.

- Cohesion criterion
  - A strong relationship indicates the absence of a structural hole

![Redundancy by Cohesion](image)

- Structural equivalence criterion
  - Structurally equivalent contact indicates the absence of a structural hole.

![Redundancy by Structural Equivalence](image)

**The Efficient-effective network** – optimize network to increase structural holes and thus information benefits.

- Efficiency – maximize the number of nonredundant contacts in the network to maximize the yield in structural holes per contact.

![Network A', Network B', Network C'](image)

*Figure 1.3 Strategic network expansion*
- Effectiveness – maximize total number of people reached with all primary contacts.

- Growth patterns

- Exceptions: 1. Leisure and domestic clusters 2. Cluster of contacts where resources are dense
Structural holes and weak ties

Three classes of structural holes
- Holes between the cluster around contact A and everyone in your own cluster
- Holes between the cluster around contact B and everyone in your own cluster
- The hole between contact A and B

Structural holes and weak ties predict the same ranking of information benefits.
- You are best positioned for information benefits
- You have two weak ties and the largest volume of structural holes

The strength of structural holes
- Structural hole is the cause of information benefit; tie weakness is a correlate
- The study of weak ties obscures the control benefits of structural holes

Control and the Tertius Gaudens

The structural holes that generate information benefits also generate control benefits, giving certain players an advantage in negotiating their relationships.

Tertius Gaudens – an individual who profits from the disunion of others.
- Being the third between two or more players after the same relationship
- Being the third between players in two or more relations with conflicting demands

The essential tension
- There is a presumption of tension here. Control emerges from tertius brokering tension between other players. No tension, no tertius.
- The tension essential to the tertius is merely uncertainty
Where there is any uncertainty about whose preferences should dominate a relationship, there is an opportunity for the tertius to broker the negotiation for control by playing demands against one another.

The connection with information benefits

- Structural holes are the setting for tertius strategies. Information is the substance.
- The two kinds of benefits augment and depend on one another.

**Entrepreneurs – the motivation prompt a player to pursue information and control benefits**

The issue of motivation

- Knowing about an opportunity and being in a position to develop it are distinct from doing something about it – control benefits require an active hand in the distribution of information.
- When people take the opportunity to be the tertius, they are an entrepreneur in the literal sense of the word – A person who generates profit from being between others.
  - Entrepreneur refers to a kind of behavior, the tertius is a successful entrepreneur.

Possible motivations

- Culturally induced
- Psychological need

Opportunity and motivation – network is simultaneously an indicator of entrepreneurial opportunity and of motivation.

- Structural hole argument supports the motivation to entrepreneur:
  - Psychological need or cultural imperative are “push” aspect motivation, structural holes are “pull” aspect that create entrepreneur opportunities lead to success.
  - A person with psychological need for entrepreneurial behavior is prone to building a network rich in the structural holes – psychological explanation.
  - As the volume of structural holes in a player’s network increases, the entrepreneurial behavior of making and negotiating relations between others becomes a way of life – cultural explanation.
- As a result, the author treats motivation and opportunity as one and the same.
Secondary Holes

Structural holes between the primary contacts, a primary structural holes, provide information and control benefits. But the benefits they provide are affected by structural holes just beyond the border of the network. Structural holes among the secondary contacts within the cluster around each primary contact play a role in the tertius strategies. These are secondary structural holes.

Control benefits and secondary structural holes

- There must be alternatives, secondary contacts who are redundant with your primary contact And capable of replacing the primary contact in your network
- There must be structural holes among the secondary contacts.
Cluster boundaries

- Secondary contacts: Players in the same cluster are redundant contacts to the extent that they are connected with the same clusters of redundant contacts.

*Figure 1.8* Contact clusters with and without secondary structural holes

*Figure 1.9* Four redundant networks pooled as one network surrounding four substitutable players
The depth of a structural hole – The ease with which it can be developed for control and information benefits.

- When the hole is deep between two individuals, it’s easy to play them against one another with tertius strategies.

<table>
<thead>
<tr>
<th>Equivalent ties to clusters</th>
<th>Cohesion between players</th>
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<tbody>
<tr>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Strong</td>
<td>Strong</td>
</tr>
</tbody>
</table>

**Table 1.2  Depth of a structural hole between players**

**Structural autonomy**

Describes the extent to which a player’s network is rich in structural holes, and thus rich in entrepreneurial opportunity, and thus rich in information and control benefits.

Players with relationships rich in structural holes are structurally autonomous.

**Summary**

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**Competitive Advantage of Structural Holes**

<table>
<thead>
<tr>
<th>Kind of Advantage</th>
<th>Substance of Advantage</th>
<th>Social Structural Condition Responsible for the Advantage</th>
</tr>
</thead>
</table>
| Information Benefits | Access, Timing and Referrals | Contact Redundancy & Structural Holes  
network trust, size & diversity,  
cohesion & structural equivalence  
efficient-effective networks  
structural holes & weak ties |
| Control Benefits | Tertius Gaudens, Entrepreneurial Motivation | Structural Autonomy  
holes & entrepreneurial opportunity  
primary holes & constraint  
secondary holes & constraint  
hole signature & structural autonomy |

**Conclusion:** Players with contact networks optimized for structural holes — players with networks providing high structural autonomy — enjoy higher rates of return on their investments because they know about, have a hand in, and exercise control over, more rewarding opportunities.

**Figure 1.10  Argument**
This chapter defines structural autonomy for the purpose of empirical research. The chapter addresses the need for network data about the strength of relationships between the actors in the network. The chapter discusses the various ways to analyze this data to find structural holes, identify entrepreneurial opportunities, and formulate strategies to maximize profit.

Network Data

There are three kinds of social network data discussed in the chapter:

- **Sociometric** - the binary data in which a person cites another as the object of some kind of relationship
- **Joint Involvement** - counts the number of times that two players are involved in the same events
- **Direct Measures** - obtaining the measurement interaction by reading a measuring tool, such as the flow of dollars

These three kinds of data can be transformed in various ways to define a relationship variable $Z_{ij}$. The subscripts are used to indicate the source and object of the relationship. Here and throughout the chapter, the various formulations use the following variables:

- $i$  
  Player
- $j$  
  Redundant contact
- $q$  
  Another contact in which the player has invested time and energy in a relationship
- $p$  
  Proportion of i’s network time
- $m$  
  Marginal strength
- $z$  
  Variable measuring strength
- $O$  
  Organization of players within a cluster around contact $j$
- $A$  
  Expected rate of return on an investment
- $c$  
  Constraint
- $N$  
  Number of contacts in a player’s network
- $C$  
  Sum of constraint across all relationships
- $H$  
  Hierarchy
- $L$  
  Adjustment variable.

A high value of $Z_{ij}$ indicates a strong relationship between player i to player j. The patterns of $Z_{ij}$ that connect players define empirical indicators of structural holes.
Redundancy

Redundancy examines network connections. A common dictionary definition of redundancy is “the provision or existence of more than one means or resources to perform an activity or function.” In social network analysis, a contact (j) is redundant to the extent that a player (i) has made invested a substantial amount of time and energy in a relationship with another contact (q), to whom j has a strong tie. This condition is represented by the expression $p_{iq} m_{jq}$.

$$\frac{(z_{iq} + z_{qj})}{\sum(z_{ij} + z_{ji})}, \quad i \neq j,$$

$$\frac{(z_{iq} + z_{qj})}{\max(z_{ij} + z_{ji})}, \quad i \neq j,$$

$$\sum_{q} p_{iq} m_{jq}, \quad q \neq i, j.$$

**Effective size of i’s network** = $\sum_{j} \left[ 1 - \sum_{q} p_{iq} m_{iq} \right], \quad q \neq i, j$.

The effectiveness size of the network represents the non-redundant portion of the network.

High redundancy = Low Efficiency
Constraint

Constraint examines dependence upon network connections. There are three kinds of constraint in social network analysis – constraint of holes missing within the network, dependence and exclusion, and constraint of holes missing beyond the network. An isolate has no constraint because he or she is not connected to anyone. However, due to this lack of connection, he or she also has no power.

The Constraint of Absent Primary Holes:

Entrepreneurial Opportunities are constrained when another of a player’s (i) contacts (q), in whom the player (i) has invested a large portion of network time and energy, has invested heavily in a relationship with another contact (j). This condition is represented by $p_{iq}p_{qj}$.

$$p_{ij} + \sum_a p_{ia}p_{aqj}, \quad q \neq i, j.$$  

Here the player is unable to get a return on his or her investment of time because the object of his or her investment is connected to another contact in which the player has also invested time. There is no opportunity to meet a new contact; therefore no structural hole is present.

$$\left(p_{ij} + \sum_q p_{iq}p_{qj}\right)^2, \quad q \neq i, j.$$  

Entrepreneurial opportunities are also constrained to the extent that a player (i) has invested all of his or her time and energy in building relationships that leads back to a single contact.
Exclusive Access and Constraint

The redundancy of a contact (j) is measured by the strength of the contact’s (j) connections to other contacts. The effect size of a network increases when a player’s (i) contact (j) has information access, timing, and referrals to share with the player (i). Here network size is unimportant, as it is the uniqueness of the additional contacts that affects redundancy.

Constraint is different, such that as the network size increases, constraint decreases because constraint is measured as a proportional relationship of all available relations.
Constraint decreases as a network expands. The decrease is marginal, additions to a large network decrease constraint less than additions to a small network. Density increases constraint, less in large networks than in small networks. Size decreases constraint, more in a dense network than in a sparse network. Constraint is higher in a completely connected network because all relationships are equal, and thus the proportions are the same.

In another theory of constraint, the constraint measure changes slightly in order to determine if all that is needed to span a structural hole is direct, personal access between contacts.

$$\left( p_{ij} + \sum_{q} p_{iq} R_{qj} \right)^2$$

This expression measure the extent to which the contact’s (j) relationship with another contact (q) is among q’s strongest relationships. This slightly different constraint measure greatly changes the associate with network
size and density, implying now that it is easy for contacts to exercise constraint in large dense network. Here additional contacts connected to existing contacts reinforce demands from one contact to another, rather than undermine them.

The differences between the graphs above illustrate the difference possible from the shift in thinking about how indirect constraint operates. Playing contacts against one another is a triadic game of player (i) against two contacts (j and q). However, existing evidence on constraint effects is limited. The Constraint of Absent Primary and Secondary Holes:

An oligopoly exists when a network is dominated by a few actors and entry of new players is difficult or impossible. In the expression below, the organization of players (O) are clustered around a contact (j), such that it would be difficult to replace the contact (j), or threaten him or her with being replaced. There is a lack of primary or secondary structural holes around the player (j).
A variety of measures for the organization of players (O) in the network exists. Selecting a measure depends on the available data and the cluster boundaries in a study population. Three such measures include:

1) Direct measure of network data of players and relationships within the cluster
2) Measure of the lack of structural holes within the cluster
3) Status-defining attributes (provide the weakest measure).

Constraint is the player’s (i) investment in reaching the contact (j) multiplied by the lack of structural hole around the contact (j) with which the player (i) could negotiate a favorable rate of return on the investment.

\[
lack \text{ of holes around } j = \left( p_{ij} + \sum_{q \neq j} p_{iq} p_{qj} \right) O_j, \quad i \neq q \neq j.
\]

If there are a large number of players in a disorganized cluster, there may be numerous structural holes within the cluster. Constraint can then be avoided by playing them against one another.
Hole Signature

By comparing investment and constraint characteristics of player’s relationships, patterns can be identified which characterize the existence of entrepreneurial opportunities. These patterns which can be identified, studied, and compared, are referred to a hole signature.

The shaded area is the hole signature of the network. It describes the distribution of opportunity and constraint across the individual relationships in a player’s network. The hole signature provides a quick visual impression of the volume and location of opportunities and constraint, which can be used in analyses. The jagged edges of the diagram identify the sites where the player has the most and least opportunity for entrepreneurial behavior. Three kinds of relationships exist – opportunity, constraint, and sleeper.

Kinds of Relationships

- Opportunity relationships exist at the presence of a large band in the hole signature. These are the relationships in which the player has the greatest room to negotiate and control.
- Constraint relationships exist at the presence of a narrow band in the hole signature. This relationship is present where a player has invested a large amount of time and energy into a contact where few or no structural holes are present. This is the relationship in which the player has the least amount of control and is disadvantaged.
- A sleeper relationship is one to which the player has devoted little time or energy. No investment has been made, so there is no gain or loss associated with this relationship. However, the relationship may become valuable in the future, thus it is a sleeper at this point in time, though that may change in the future.
Kinds of Environments

The distinction in the kinds of negotiating environments is important because they highlight the conditions in which negotiation is favorable, identifying opportunities and constraints. Additionally, they define the domain of environments in the population and identify the limits to the mixtures of opportunities and constraints.

*Figure 2.7* Hole signatures for illustrative networks. (Relations without assigned values have a value of 1.)
Structural Autonomy

Structural autonomy is a summary measure of the player’s advantage in the competitive arena. A player has structural autonomy to the extent that his or her relationships are free of structural holes at their own end and right in structural holes at the other end. These players have many contacts from whom to choose, however those contacts have very few choices, other than the player.

This image represents a player with very little structural autonomy. Changes in structural autonomy occur at low levels of constraint. High levels of constraint cause autonomy to decline linearly with the decrease in the number of structural holes.

The player can acquire a strategic partner; a contact that is strongly connected with otherwise disconnected contacts in the network, in order to gain entry into the network. Here holes in the network are borrowed from the strategic partner, and that partner’s sponsorship determines the effectiveness of the network. The strategic partner provides cues to his or her contacts, thereby legitimizing the player in the competitive arena.

Caution must be used in the selection of a strategic partner. A player’s boss may prove to be an inappropriate choice for a variety of reasons; one being that the boss is too close to the player. The boss’s contacts may doubt the sincerity of the boss’s cues about the player or assume that the boss is legitimizing the player in order to reflect positively on him or herself. Additionally, the relationship between a boss and a player may be jeopardized by the potential for conflict or disagreement in their everyday work life. A player seeking a strategic partner should look for a prestigious member of the network and develop a network connection built around that the person as a strategic partner.
Summary

The information presented in this chapter is presented for use in empirical research. Three points are demonstrated:

1) The relations that span the control benefits of holes are ties of exclusive access.
2) Structural autonomy is a nonlinear function of constraint with the initial loss of structural holes.
3) The boundary around a competitive arena is an issue for players outside of the arena, as the information and control benefits of structural holes within the arena are not available to outsiders.

In order to gain entry, outsiders should consider the use of a strategic partner to help legitimize their position. The partner’s access to structural holes should be considered in partner selection, as well as the relationship that may exist between the outsider and the partner.

A player’s potential for action is summarized in three ways:

1) Effective size is the number of non-redundant contacts in the network.
2) Structural autonomy is an interval scale measuring the extent to which the player has unconstrained access to structural holes, relative to others in the population.
3) A hole signature summarizes the distribution of opportunity and constraint across each relationship in the network.
This chapter presents a research application of the measures discussed in Chapter 2 by testing the argument in economic transactions. Characteristics of producer, supplier, and customer networks can be observed to predict how profit will be distributed among the players. The theories associated with structural holes can be used to determine where advantages and disadvantages lie within these relationships.

**Some Findings**

![Diagram](https://via.placeholder.com/150)

As with the control of information and opportunity discussed in Chapter 2, the lack of structural holes among suppliers and customers affects the negotiation between them. The distribution of structural holes in a product network gives producers a negotiating advantage, allowing them to negotiate prices in their favor and increase their profits.

**Summary**

The trade market supports the structural holes argument, such that:

1) Profit margins are eroded by structural holes among producers and are enhanced by structural holes among suppliers and customers.

2) Hole effects are nonlinear and multiplicative in the final structural model predicting profit margins. Structural holes have their greatest effect as completely unconstrained action begins to be constrained.

3) The bulk of business for most producers is concentrated in a few critical transactions.
This chapter presents a research application of the main conclusions drawn in Chapter 1 by testing the conclusions against data about the networks and achievements of senior managers in a leading American high-technology firm. The findings of which suggest that managers with networks rich in structural holes get promoted faster and at a younger age than their peer. This chapter provides a more complex analysis of the structural hole theory than that provided in Chapter 3, such that it involves more relationships and more dimensions than the study of economic transactions.

Some Findings

Findings indicate faster promotions for managers with networks rich in structural holes.
Promotion was also influenced by hierarchical structure. It was not shown to influence the speed of promotion, but with the cumulative number of promotions that determine a manager’s rank or position within the network. Thus the hierarchical structure of a network should be considered during network selection.

Summary

The information and control benefits associated with structural holes are an advantage to managers. The managers who employ a strategy to maximize those benefits are an asset to the firm with which they are employed. In Chapter 4, Burt establishes five points:

1) Managers with networks rich in structural holes tend to be promoted faster, and achieve their rank earlier.
2) Hole effects are most evident for managers operating in a social frontier, where people from different kinds meet.
3) The most serious frontier is the political boundary between top leadership and the rest of the firm.
4) Competition has a more personal flavor, and this environment can prove difficult for women and entry-level men to gain access to promotional opportunity without the aid of a strategic partner.

5) There are no reported differences between managers and their tendencies to have one network rather than another. For instance, women are no different than men in the kinds of networks they have.
Informal relations among people/groups constitute a network of dense clusters segregated by structural holes. Brokerage and closure predict the distribution of social capital advantage in network.

**Brokerage:**
- more homogeneous information within groups than between groups
- have a vision advantage in detecting and developing good ideas
- more at risk of praise and reward

**Two conclusions:**
1) **The effects of social capital are substantial and concentrated in extreme network conditions.**
   - Advantage of brokerage - “Connecting two contacts in an already densely connected network does not erode vision-performance as much as the first pair of contacts connected in the network”
   - Advantage of closure - “Breaking the link between two contacts in a completely connected network erodes trust-performance more than breaking the link between two contacts in an already fragmented network”

2) **Brokerage and closure are twice complementary**
   - Augmenting each other in creating social capital

**5.1 Network Model and Austrian Metaphor**

Closure and brokerage counterbalancing each other’s weaknesses raises questions about equilibrium. Closure creates inertia in social boundaries such that the existing segregation between groups is a kind of equilibrium.

Equilibrium is a function of brokerage breaking free from the inertia of closure.

**Information is everywhere imperfect and incomplete due to:**
- The distribution of belief and behavior in the small world
- Knowledge unevenly distributed across groups

**The people who do the integrative work:**
- Get a premium, in compensation, recognition, and responsibility
- Do not create original means of production but employ existing means differently, and carry out new combinations

**The benefits received for creating new combinations make visible the price for integrative work.**
- The benefits affects other’s decision to join in the work. As successive bridges are built across a structural hole, returns diminish and the hole is closed

**The price paid for integrative work should decrease in mean and variance on the path to equilibrium.**
- The price paid for integrative work across a structural hole decreases with the number of bridges across the hole
- Brokerage is valuable for introducing variation, so the benefits decrease with additional redundant participants
The benefits of a bridge decreases across successive bridges, and the decrease is probably steeper for the first few bridges than for the last few.
The cost must decrease more quickly because the first entrant has to create both product and market.
Cost decreasing faster than benefit, creating a second-mover advantage

5.2. Enduring Advantage

To this point, brokerage provides a temporary, local advantage on the path to equilibrium. But it could become an enduring advantage if the move to equilibrium is slowed, or repeatedly disrupted. If bridges are not absorbed into the social structure around a hole, brokerage also can become enduring.

5.2.1. Passive and Active Structural Holes

Passive hole: if bridges across it are readily absorbed into the surrounding social structure.

Active hole: if interest attached to the hole resist bridges.
  - Bridging structural holes while simultaneously creating holes – Example: headhunter case
  - Preserving boundaries describe interests opposing bridge across structural holes – Example: Tilly’s mechanisms

Tilly four mechanisms:
  1. Providing an opportunity for insiders on one side of the hole to exploit outsiders on the other side
  2. Permitting insiders to hoard opportunities from outsiders
  3. Making it easier for insiders to construct new organization based on existing models in which insiders are advantaged
  4. Daily routines and valued social ties of aid, influence, and information gathering have adapted to the hole

The fourth mechanism is the way in which passive structural holes become active. Examples: Cotton manufacturing case; Clendenin case; MY-CD.com and Musicmaker.com case; Fur tribe case.

5.2.2. Stability Despite Brokerage

It is possible for network entrepreneurs to enjoy the rewards of brokerage without having to pay the high cost of establishing bridge relations, whereupon brokerage is an enduring advantage and the existing network structure continues through time as if in equilibrium.

To move to a new equilibrium, ideas have to be worked into coordination across holes in the existing structure.

Good ideas emerged as hypothesized from the intersection of social worlds, but spread in a way that would continue segregation between the worlds.
5.3. Conclusion

Equilibrium is local balance: closure pulling groups in on themselves while brokerage pulling them apart into new combinations.
Social Capital in the Creation of Human Capital  
James S. Coleman

Coleman’s work addresses problems in two main streams, sociology and economy, of social action.
- Sociologist’s view: Actor is socialized and action is governed by social norms, rules, and obligations.
- Economist’s view – Actor has independent goals, and acts entirely in self-interested manner to maximize utility.

Both streams have serious defects:

Sociologists tend to consider the actor without “engine of action”. The actor is influenced by the environment. While economists tend to think people are only interested in maximizing utility. Some authors in both streams have attempted to impart some of the insights: Social organizations affect economic exchange (Ben-Porath (1980)); Particular economic institutions arise and affect the functioning of the social organization…

Types of Capital

All forms of capital are used to facilitate action and/or production

**Physical Capital** (tools, machines)
- Changes in materials to form tools that facilitate production

**Human Capital** (education, training)
- Changes in person that bring about skills and capabilities that facilitate production

**Social Capital** (community, organizations)
- Consist of some aspect of social structures
- Social structures - facilitates action and production
- Social capital is a public good (only a small portion of the benefits are consumed by the producer)

Physical capital can be measured in terms of equipment/machines and human capital in terms of education, experience or IQ. However social capital is harder to define and measure.

Examples of Social Capital

**Wholesale diamond markets**
- **Trust** - In negotiating a sale, a merchant will hand another merchant a bag of stones without any payment
- **Closed Community** – New York City jewelers form a relatively closed community based on religious beliefs and intermarriage
- **Efficiency** – An efficient market without official insurance policies and regulations

**Detroit vs. Jerusalem**
- Jerusalem - Adults will look after unattended children
- Detroit - No direct social norms to watch a stranger’s child. Parents must supervise their own children
- Result - Higher social capital in Jerusalem

Conclusion of the examples
- The value of social capital for a number of outcomes, both economic and noneconomic

Three Forms of Social Capital

1. **Obligations, Expectations, and Trustworthiness of Structures**
- If A does something for B and trusts B to reciprocate in the future, this establishes an expectation in A and an obligation in B
- Depends on two elements: trust & obligation to repay (credit slips example)
• Building up a set of obligations from others by effectively using resources (Legislator example)

2. Information Channels
• Use relationships to keep informed

3. Norms and Effective Sanctions
• Establishes rules
• Inhibits crime
• Promotes the interest of the collective
• Facilitates action while constraining others

Closure of Social Network
• helps promote social capital
• creates trustworthiness in a social structure

Effective norms depend on closure
(1.a) – A can harm B and/or C without combined forces from B & C
(1.b) – B & C can work together to provide a collective sanction on A

Social Capital in the Family
• financial capital – the family’s wealth
• human capital – parents’ education
• social capital – relations between children and parents

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<tr>
<th></th>
<th>Percentage Dropping Out</th>
<th>Difference in Percentage Points</th>
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<tbody>
<tr>
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<tr>
<td>Single parent</td>
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<td>2. Additional children:</td>
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<td>One sibling</td>
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<tr>
<td>Four siblings</td>
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<td>4. Mother's expectation for child's education:</td>
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<td>Expectation of college</td>
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* Estimates taken from logistic regression reported more fully in App. table A1.

Social capital in the family is a resource for education of the children. Students with higher social capital within family are more likely to finish high school than students with lower social capital.
Social Capital outside the Family
The social capital for young person does not solely reside within the family.

Social Capital for High School Students

High school students of networks with higher social capital are more likely to finish high school than students with lower social capital.

Private schools – high in human/financial capital, low in social capital
Catholic schools – high in social capital

Results/Key Findings

- Introduces social capital to social theory
- Social capital aids creation of human capital
- Social capital can explain high school dropout rates
- Social capital is a public good. Actors who generate it ordinarily capture only a small part of its benefits