

# James P. Choy

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Development Economics  
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2008 (Oral): Development Economics (*with distinction*), Microeconomic Theory  
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**Dissertation Title:** Essays on Institutions and Development

**Committee:**

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**Expected Completion Date:** May 2012

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Ph.D., Economics, Yale University, expected May 2012  
M.Phil., Economics, Yale University, 2009  
M.A., Economics, Yale University, 2008  
B.A., Ethics, Politics, & Economics (*cum laude*), Yale University, 2003

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Yale University Dissertation Fellowship, 2011  
Yale University Graduate Fellowship 2006-2010  
Yale University Economic Growth Center Prize 2006-2010  
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Introductory Microeconomics, Fall 2010  
 Game Theory, Spring 2010  
 Intermediate Microeconomic Theory, Fall 2008, Fall 2009

**Other Relevant Experience:**

Volunteer, U.S. Peace Corps, Kayes, Mali, September 2003 - November 2005

**Working Papers:**

“A Theory of Cooperation in Groups, with Evidence from Nepal” **Job Market Paper**

**Work in Progress:**

“Does sugar production cause inequality? Evidence from the expansion of the Indian sugar industry, 1932-1951”

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**Dissertation Abstract****I. A Theory of Cooperation in Groups, with Evidence from Nepal [Job Market Paper]**

Recent research has demonstrated that informal, kin-based groups play an important role in regulating the economy in developing countries. These groups have a number of functions: they enforce trade contracts (Greif 1993), they provide mutual insurance (Grimard 1997, Munshi and Rosenzweig 2009, Mazzocco and Saini 2010), and they gather information, for example about job opportunities (Munshi and Rosenzweig 2006). More generally, a theme in the literature is that informal groups can promote cooperation between group members in circumstances where formal institutions to support cooperation are absent. In my job market paper, I propose a mechanism through which informal groups support cooperation, I show how this mechanism can explain some otherwise puzzling stylized facts about groups, I derive and test comparative statics of my theory using data from Nepal, and I discuss some policy implications of my theory.

I begin my paper by pointing out two puzzling features of groups in developing countries. First, communities are typically divided into many smaller groups. However, for each of the functions on the list above, there is a natural argument that the function could be carried out more efficiently by a large group. For example, a large mutual insurance network is better able to diversify risks than a small mutual insurance network. For this reason, it might seem plausible to think that there would be economic pressure for one group to expand to include the entire community. Yet this does not seem to happen.

A second puzzle is that many groups have a social norm prohibiting group members from interacting in certain ways with outsiders. For example, in the Nepalese caste system, members of different castes are not supposed to marry, eat together, or in some cases even touch each other. In a Walrasian framework, however, a social norm that restricts the choice set of potential relationship partners can only be welfare reducing. So it is puzzling how such a social norm could persist.

I develop a model that explains these two puzzles. In my model, agents search for relationship partners in a community that is divided into payoff irrelevant groups. Within each relationship, agents play a version of the repeated prisoner's dilemma. The level of cooperation that can be sustained within each relationship depends on the outside option to that relationship; the lower the outside option, the higher the level of cooperation that can be sustained. A social norm that prohibits agents from interacting with members of different groups makes it harder to find a new relationship if the current relationship breaks up, lowering the outside option to the current relationship and increasing the level of cooperation that can be sustained in the current relationship.

A natural question is why agents follow the social norm. My model generates adherence to the social norm of group segregation as an equilibrium outcome, even though groups are payoff irrelevant and agents are rational and motivated only by material gain. Two additional features of the model generate these results. First, a small proportion of the population is myopic and cannot sustain cooperation for any reason. Second, agents can observe whether their relationship partners have ever defied the social norm and interacted with a member of a different group in the past. In my strategy profile, only myopic agents defy the social norm, and so no agent will cooperate with any agent who has ever defied the norm, as all such agents are believed to be myopic. As a result, only myopic agents can profitably defy the social norm, and so the strategy profile is an equilibrium. I argue that this equilibrium reproduces many qualitative facts about real groups derived from the anthropological literature.

An empirical implication of my model is that small groups are better able to support cooperation than large groups. I test this implication by looking at two specific kinds of cooperative relationships within castes in rural Nepal. First, I examine informal credit relationships. My model predicts that there should be less informal borrowing and lending between the members of large groups than between the members of small groups. Second, I examine cooperative exchange labor relationships, in which one farmer helps to work another farmer's land in exchange for an agreement that the second farmer will provide a similar service in the future. My model predicts that the ratio of exchange labor to market labor used by farmers in larger castes should be lower than the ratio for farmers in small castes. The data support both of these predictions.

My model generates the implication that policy changes that reduce the relative value of institutions that support cooperation, such as the creation of social insurance programs or the expansion of the rule of law, should have the effect of reducing or eliminating the salience of group membership. This could be helpful in ameliorating a wide variety of inter-group conflicts.

## **II. Does sugar production cause inequality? Evidence from the expansion of the Indian sugar industry, 1932-1951 [In Progress]**

Engerman and Sokoloff (2000) argue that the reason for the divergent economic outcomes of the different nations of the Americas can be traced to their different agricultural endowments, and in particular to their different suitabilities for plantation crops, most notably sugar. According to their theory, plantation agriculture generates inequality, which leads to bad institutions, which leads to poor economic outcomes. In this paper, I examine part of the Engerman-Sokoloff hypothesis by studying the effects of the Indian sugar tariff of 1932, which generated an eight-fold expansion of the Indian sugar industry within ten years and led to India's current position as the world's largest producer of sugar. Using a recent dataset from the FAO, the Global Agro-Ecological Zones dataset, I am able to identify which Indian districts are suitable for sugar cultivation. Then, using a difference-in-difference identification strategy with data from the 1931 and 1951 Indian censuses, I can identify the effect of increased sugar production on various outcomes including inequality and public goods provision. Results are in progress.