The Economics of Identity and Conflict

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"*Violence is fomented by the imposition of singular and belligerent identities on gullible people, championed by proficient artisans of terror.*"

Amartya Sen (2007, p.2). "Identity and Violence:
The Illusion of Destiny".

What is Identity and how does it interact with Conflict?

- Identity: the sense of one's self – a significant area for theoretical and applied research
  - Who a person thinks they are and what they think the other people are (Tajfel and Turner, 1979).
  - Identity creates ingroups and outgroups; affects an economic agent's utility (Akerlof and Kranton, 2010).
- Conflict: Situations in which engaged parties exert costly resources to resolve a dispute or gain a reward.
  - Defined in Economics literature often as 'Contests' to facilitate the use of contest theory.
- The sense of identity is one of the oldest precursors to Conflict.

Examples of Identity and Conflict

- One of the oldest epics, Iliad (circa 1260–1180 BC), narrates the conflict between people identifying themselves as Greeks or Trojans.
- Recent times, various identities – nationality, race, ethnicity, religion, language, immigration status, and economic class – turn out to be some of the main reasons for conflict.

Features of Identity

- Identity can be minimal: random assignment to a group.
- Identities can be endogenous and dynamic, which then changes how it impacts one's utility.
  - Immigration, job, parenting
  - Religious identity (Muslim) created East Pakistan; but then linguistic identity (Bengali) made it Bangladesh
  - Destruction of identity (make-up, atheism, suicide bomber)
- Identity can lead to conflict since it may create a tension between
  - Self-interest and the interest of a social group.
  - Interest of own group versus another
- Identity may also emerge as a consequence of conflict
  - Rohingya to refugee

Identity and conflict: Theory & Applied

- Two main aspects of identity
  - Identity can make an individual feel that they belong to a social group – common identity.
  - It can also make them feel like they do not belong to the dominant social group that they see around them – a sense of different identity.
- Theoretical researchers study and compare the affects of these two identities (both together and separately) on individual decision making – and also model the consequent impact on an agent's utility.
- Applied researchers study the effect of fractionalization, polarization and political systems (all stemming from identity) on conflict intensity, and verify the theoretical predictions.

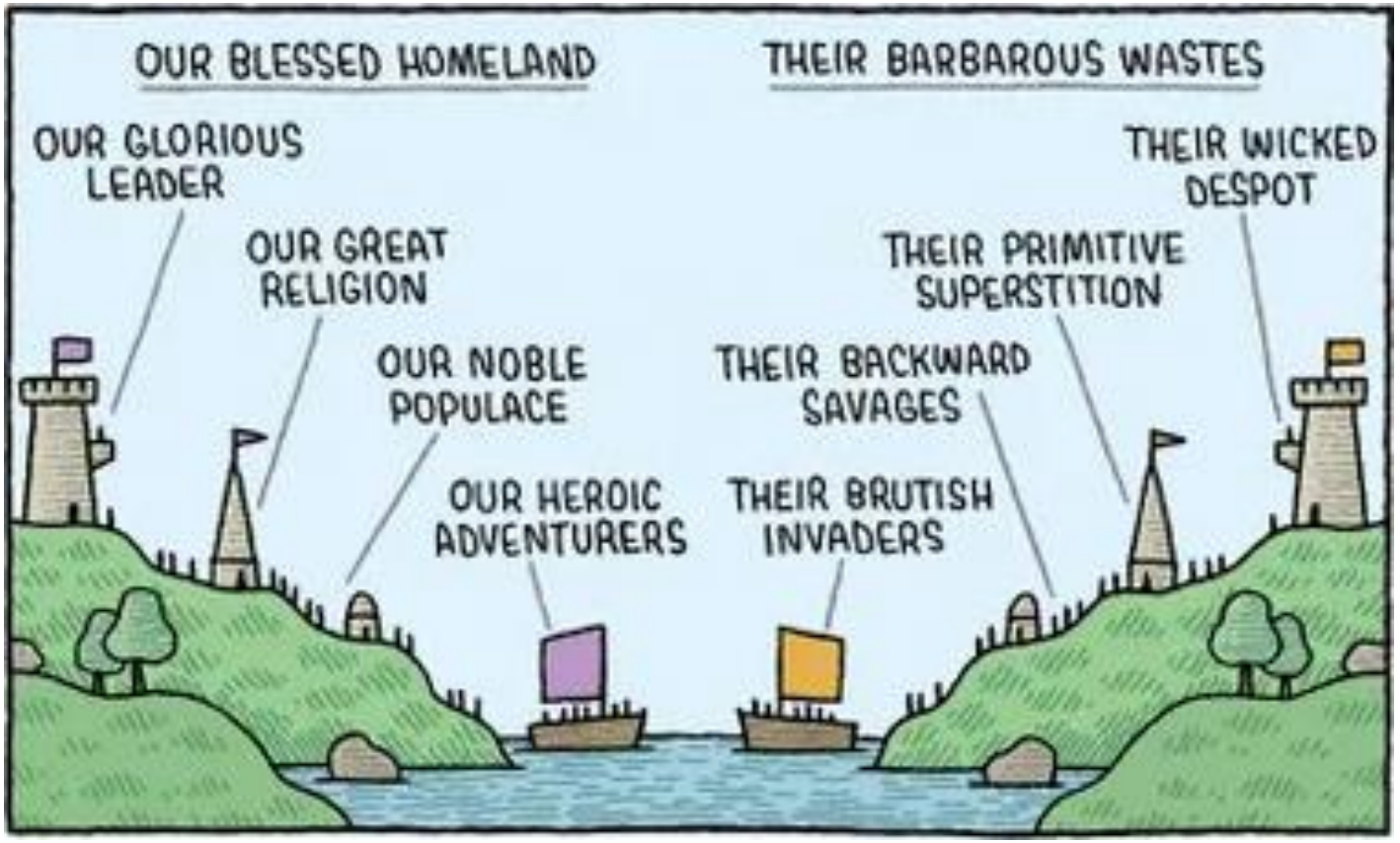
Summary of the current study

- We survey the literature on identity, conflict, and their interaction.
  - Model conflicts as contests
  - Focus on the theoretical, experimental, and empirical literature from economics, political science, and psychology.
  - Complement Charness and Chen (2020) and Shayo (2020).
- We cover the following
  - **Theory:** preference and beliefs to explain the reasons for and the effects of identity and analyzes issues such as identity dependent externality, endogenous choice of joining a group etc.
  - **Empirical:** various measures of identity, identity distribution, religious polarization; fractionalization of other identities
  - **Experimental:** real and minimal identities, priming of identity, and parochial altruism

Why is this important?

- Perception of an individual, or that of a nation, goes on to determine the economic decisions of the day.
  - People's identity is intimately related to what makes them feel better and it is in terms of the latter that we make welfare judgements.
- Identity can be beneficial for collective policymaking, or it can lead to devastatingly wrong policy decisions with mass support, which ultimately lead to conflict.
  - Nationalism is an identity – a coherent mythology for large groups of human beings to accept each other.
  - From nationalism stems xenophobia, one of the major catalysts for conflict in modern history.
- There is simultaneous causality between identity, economic decision making, and conflict.

Theoretical background



Theory of Identity and Conflict

- We introduce the conception of identity into a contest theory model of conflict (Konrad, 2009).
  - Engaged parties expend costly 'effort' (irrespective of outcome) to improve the probability of winning a valuable prize.
  - The level of effort is considered as the intensity of conflict – a higher effort level reflects a higher conflict level.
  - Each player maximizes her expected payoff.
- Utility is a function of this payoff.

- Identity is introduced in the utility function following the 'other regarding preferences' literature
  - preference based models
  - belief based models.

A model of Identity and Conflict

- Consider a contest with N identical risk-neutral players.
- Player i spends effort $b_i \geq 0$ to win a prize of value $V > 0$.
- The probability that player i wins the prize (contest success function; Skaperdas, 1996) is: $p_i(b_i, \boldsymbol{b_{-i}})$.
  - $\frac{\partial p_i}{\partial b_i} \geq 0, \frac{\partial p_i}{\partial b_{-i}} \leq 0$, and $\sum_i p_i = 1$.
- Without the concept of identity, Player i tries to maximize their expected payoff: $\pi_i = p_i V - b_i$.

- We show an example from the preference based identity model
  - Introduce identity through a group contingent social preference.
  - A modified version of Chen and Li (2009), Chen and Chen (2011).
  - For further examples see Charness and Chen (2020, Sec. 2)

A model of Identity and Conflict

- In this model, a player's utility is a combination of the own payoff, (relative) payoffs of the players with the same identity, and the (relative) payoffs of players with different identity.
- Formally, if there are two identity groups 'In-group' (I) and 'Out-group' (O) and Player i belongs to the in-group, then their utility function can be written as:

$$u_i = u_i\left(\pi_i, \sum_{j \neq i, j \in I} f_i\left(\pi_i, \pi_j\right), \sum_{j \neq i, j \in O} g_i\left(\pi_i, \pi_j\right)\right)$$

  - Here f_i and g_i are functions measuring relative payoffs between the players. These, e.g., can take the form of inequality aversion (Herrmann and Orzen, 2008) or spite (Reichman, 2007).
- With specific functional forms, and context of the model, it is possible to find closed form solutions for these games.

Details of the Utility Function

- A player's identity affect their own payoff, (relative) payoffs of the players with the same identity (in group), and the (relative) payoffs of players with different identity (out group).
- A relatively lower own payoff compared to others affects utility negatively.
- A relatively higher own payoff can affect utility either negatively (inequality aversion; Fehr and Schidmt (1999)) or positively (spite; Reichmann(2007)).
- Effects are expected to be higher while in comparison with the out-group players.
- More spitefulness towards out group compared to in group results in higher equilibrium effort exerted when identity is present; presence of identity can increase the intensity of conflict.

Identity Dependent Externality

- Group contingent social preference can also occur when the identity of the winner is included in the utility.
  - Reward valuation depends on the identity of the winner.
  - Seen in multi-sided wars or conflict among various ethnicities.
- Everyone strictly prefers own win over others, but can prefer the win of some players over some others if self-win is not realized.
  - If players value others' winning more they exert less effort – identity dependent externality results in less conflict.
  - If the players only value the winning of in-group rivals, and not out-group ones, then the out-group players increase conflict effort.
- Linster (1993), Esteban and Ray (1999), Klose and Kovenock (2015a, b), Bagchi et al. (2019)

Identity Dependent Externality

- **Linster (1993)** is the first to introduce such a structure with a lottery contest success function (Tullock, 1980), albeit without mentioning the term 'identity'.
- The valuation of the reward for player i is a vector $v_i = (v_{i1}, v_{i2}, \dots, v_{iN})$, consisting of the valuation of player i when player 1 wins, player 2 wins and so on.
- For three players, the payoff of player 1 would look like

$$\pi_1 = v_{11}\left(\frac{b_1}{b_1+b_2+b_3}\right) + v_{12}\left(\frac{b_2}{b_1+b_2+b_3}\right) + v_{13}\left(\frac{b_3}{b_1+b_2+b_3}\right) - b_1$$

- This system of equation is solved simultaneously, and shown that the original Tullock (1980) and the group contest with additive impact function (Katz et al., 1990) are special cases of this model

Identity dependent externality (Esteban and Ray, 1999)

- Consider many mutually exclusive groups comprising individuals, the outcome to be pure public goods, and a general cost function.
- Prove the existence and uniqueness of equilibrium, and analyze the effects of the distribution of players in different groups (i.e., identity) on the level and pattern of conflict.

- See also
  - Esteban and Ray (1994) for a measure of polarization that is relevant for identity-wise fragmented society
  - Esteban and Ray (2008) for the interaction of class and ethnicity as identity in the context of conflict
  - Esteban and Ray (2011) for an interpretation of social distance and inequality as identity.

Identity dependent externality (Klose and Kovenock, 2015a,b)

- Investigate identity dependent externality with an all-pay auction contest success function; characterize the equilibria in such all-pay auctions; and investigate the interaction between extremists and moderates.
- Klose and Kovenock (2015b)
  - Standard all-pay auction results hold only when identity dependent externalities are 'mild'.
  - With sufficient externalities, however, equilibria may not be payoff equivalent, and even identical players may earn different payoffs..
- Klose and Kovenock (2015a)
  - Define extremism as a higher per capita effort by radicals compared to centrists.
  - Extremists can suppress moderates even when in minority.

Proxy war (Bagchi et al., 2019)

- Explore the ideas of proxy war with three sponsors of war and three proxies.
  - Two of the sponsors are in-group whereas the remaining sponsor is out-group.
- Existence of multiple equilibria.
- All sponsors exert positive effort in equilibrium only when the winning reward is small.
- High enough reward leads to implicit alliance formation – two in-group sponsors coordinate in a way such that only one of them engage in conflict.
- Importance of identity in endogenous alliance formation in conflicts.

Endogenous Choice of Identity & Social Norm

- Not only is identity endogenous, but players incur cost to build an identity. Social Media influencers, celebrities etc.
- Akerlof and Kranton (2000) introduce the idea of norm of the society intertwined with the identities.
  - The players' utility depends on their own action, the action of the other players, and the degree of deviation from the norm.
  - Employed in various issues such as the labor market, schooling etc.
- Shayo (2009) endogenized choice of identity
  - Utility depends on payoff, the status of own group, and the individual social distance from the group one identifies with.
- Bernard et al. (2016) endogenizes social distance.

Endogenous Choice of Identity & Social Norm

- Fang and Loury (2005), Freyer and Jackson (2008), and Akerlof (2017) consider social interactions to define identify
  - Various model specifications to endogenize group identity as well as the norms for such groups.
- While these models include identity into a players' preference system, they leave out the concept that identity is not only what one thinks about themselves (endogenous identity), but also what they think others perceive them to be.
- Introduced by Benabou and Tirole (2011) as a belief based identity model – players have incomplete information regarding their own identity and make costly investments in building their identity.

- Applications to conflict is **very** limited.

Social Identity, Social Status and Conflict

- Perceived rather than actual – identity and related factors largely based on perception.
  - One can choose their identity
  - Expend costly resources to build an identity
- **Sambanis and Shayo (2013):** Can a common identity mitigate conflict? How does social identification affect conflict?
  - A group contest in which social identity has three building blocks – social groups, perceived distances among the social groups, and the relative value or status of the social groups.
  - One's social status depends on relative payoffs and exogenous factors (e.g., race or caste)
  - While characterizing the social identity equilibria, the authors show that a vicious cycle might arise in which conflict persists and the unifying national identity is not salient
  - Seen widely in African conflicts.

Evidences of Identity and Conflict

- The evidences of the relationship between identity and conflict emerged even before the theories were done. Two methodologies:
- Empirical methods employed in the field
  - Mostly by economists and political scientists
  - Direct evidences; however – often suffers from inadequate data or inadequate identification
- Experimental method in the laboratory as well as in the field.
  - Mostly by psychologists and economists
  - Higher level of control and straightforward identification; however, critique of external validity and generalization

Empirical Evidences

Empirical Evidences of the Relationship between Identity and Conflict

- The main questions investigated in the empirical literature in identity and conflict are
  - What are the identity related determinants of conflict?
  - Can those be separated from the economic determinants?
- Compared to the theoretical and experimental investigations, the empirical literature on identity and conflict with field data is relatively new and still developing.
- This is mainly due to the lack of availability of appropriate data and lack of control over the variables.
- We present here the main concepts and some bright exceptions

Measures of ethnic divisions: fractionalization

- **Fractionalization:** "The probability that two individuals drawn at random from the society will belong to two different groups"
  - Best-known measure: Introduced in 1964 (Soviet Atlas Narodov Mira) to measure ethnolinguistic fragmentation
  - Reflects the degree of ethnic diversity
  - When groups are of equal size, F increases with the number of groups
  - It reaches a maximum when everyone belongs to a different group
  - *Not a stable significant relationship with conflict* (Fearon & Laitin, 2003; Collier, 2004, Sambanis, 2004)

Measures of ethnic divisions: polarization

- **Polarization (**Esteban & Ray (1994); Duclos, Esteban & Ray (2004)): Measure of social antagonism
  - "Alienation" felt between members of different groups **(inter-group distances)**
  - Sense of "identification" with one's own group
  - *Aggregation of all interpersonal antagonisms*
  - With 3+ groups polarization behaves differently from fractionalization
  - Polarization declines with the continued splintering of groups
  - Polarization is globally maximized for a bimodal distribution of population

Determinants (Collier and Hoeffler, 1998)

- What causes civil wars – economic reasons or ethnolinguistic identity?
- A cost-benefit model + civil war data from 1816-1992
- Both causes are found to be significant determinants.
- The degree of ethnolinguistic fractionalization has a non-monotonic effect on conflict.
- Moderate level of fractionalization affects conflict the most.

Table 1 Determinants of the occurrence and duration of civil war

	Probit of occurrence		Tobit of duration	
variable	coefficient	t-ratio	coefficient	t-ratio
income	−0.001	2.70	−0.069	2.39
primary	16.16	2.56	1957.6	2.49
primary^2	−29.47	2.28	−4106.0	2.42
ELF	0.0329	1.35	5.582	2.00
ELF^2	−0.0004	1.60	−0.065	2.02
population	0.0003	2.39	0.0086	2.31
sigma	–	–	135.45	6.49

		Predicted		
		0	1	log likelihood: −193.62
Actual	0	65	6	
	1	13	14	

Notes: Income = PPP adjusted *per capita* income in 1960

primary = share of primary commodity exports to GDP in 1965

ELF = index of ethno-linguistic fractionalisation in 1960, ranges from 1–100

population = population in 1960 in 10,000

Determinants (Reynal-Querol, 2002)

- Studies the effects of religion and language related identities in the *intensity* of civil war, and the role of the existing political system in *conflict resolution*.
  - She gathers and combines data from various sources for 138 countries for1960-1995 on civil war, level of democracy, political system, rebellion, education, export, religious fragmentation, linguistic fragmentation, religious polarization etc.
- Animist diversity – a measure of identity especially in Africa – and religious polarization are significant predictors of conflict.
- Religious polarization turns out to be a better predictor of civil war than linguistic polarization.
- A consociational political system significantly reduces the occurrences of civil wars.

Social Distances among Identity Groups (Esteban et al., 2012a, b)

- They study the effect of three measures of ethnic distribution: polarization, fractionalization and the Gini-Greenberg index (Linguistic diversity) on conflict.
- Polarization is a more significant determinant of conflict when the winners enjoy a public good reward;
- Fractionalization is a better determinant when the winners enjoy a private good reward.

TABLE 2—DISTRIBUTION AND CONFLICT WITH COUNTRY EXAMPLES

Panel A	Intensity	Years	Panel B	Intensity	Years
Dom. Rep.	1	1	Germany	0	0
Morocco	1	15	Armenia	0	0
US	0	0	Austria	0	0
Serbia-Mont.	2	2	Taiwan	0	0
Spain	1	5	Algeria	2	22
Macedonia	1	1	Zimbabwe	2	9
Chile	1	1	Belgium	0	0
Panama	1	1	US	0	0
Nepal	2	14	Morocco	1	15
Canada	0	0	Serbia-Mont.	2	2
Myanmar	2	117	Latvia	0	0
Kyrgystan	0	0	Trin. Tob.	1	1
Sri Lanka	2	26	Guinea-Bissau	1	13
Estonia	0	0	Sierra Leone	2	10
Guatemala	1	30	Mozambique	2	27

Notes: Panel A ranks the median fractionalization decile in increasing order of polarization. Panel B ranks the median polarization decile in increasing order of fractionalization.

Income and Identity (Mitra and Ray, 2014)

- Theoretically, as the income of a group increases, the conflict intensity *against* that group increases, while the conflict intensity *of* that group decreases.
- Test this theory empirically in the context of Hindus and Muslims in India for the time period of 1979 to 2000.
- Ethnic conflict is defined as: the number of casualties, the number of death, and the number of riot outbreaks.
- The per capita expenditure by Hindus *decreases* the likelihood of conflict up to 8.1%, whereas for Muslims it *increases* the likelihood of conflict up to 9.9%.

Income and Identity (Mitra and Ray, 2014)

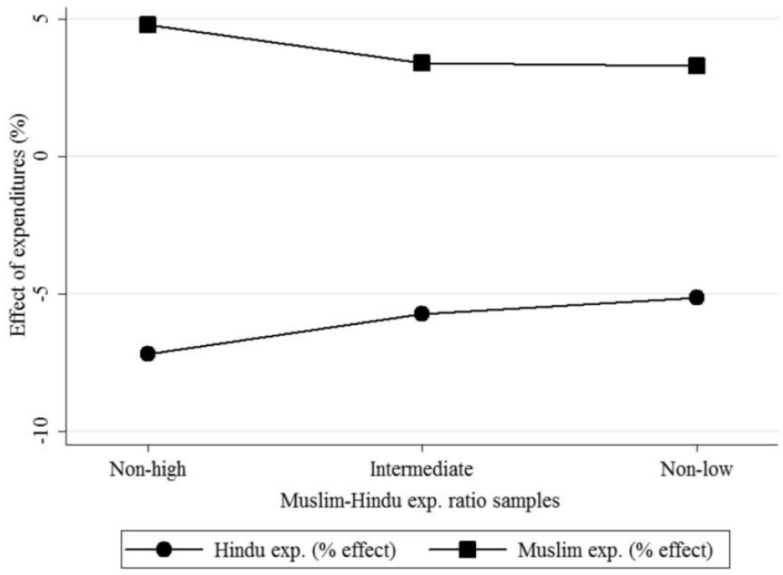


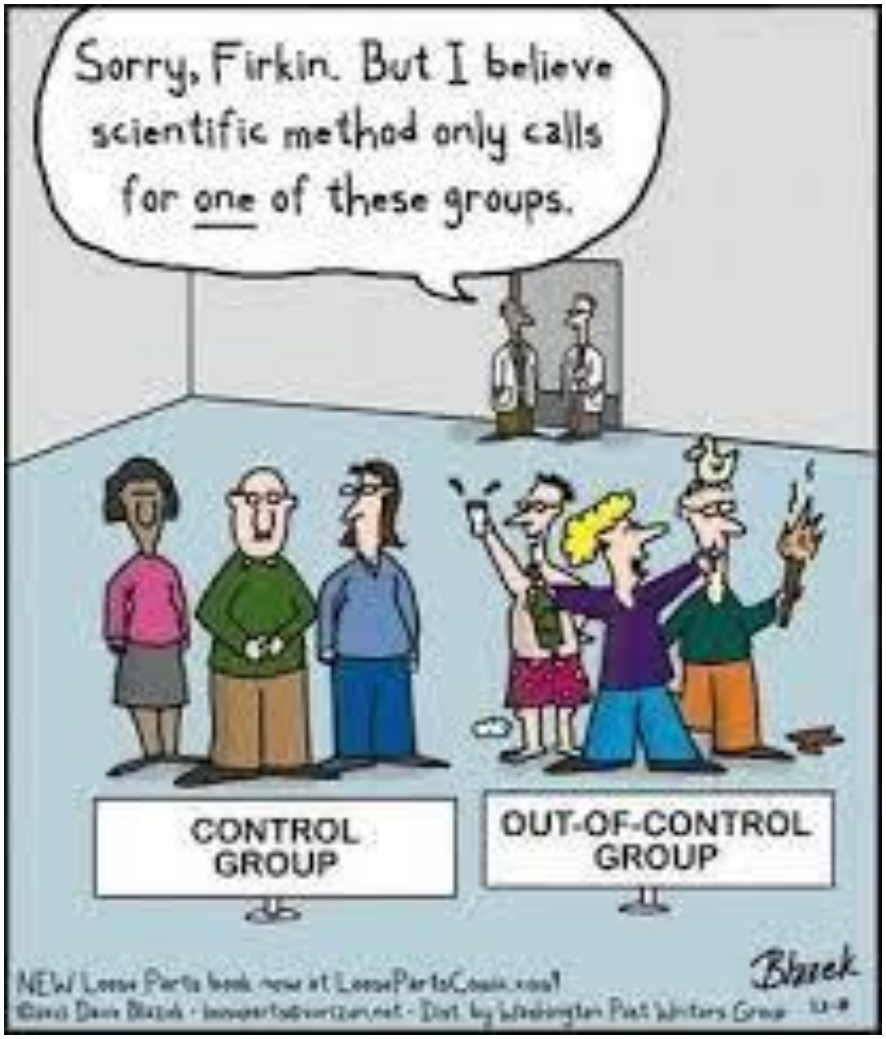
FIG. 7.—Different regional samples. The (percentage) effects on conflict of a 1 percent change in Hindu and Muslim per capita expenditures have been plotted on the vertical axis for three different regional samples: all "nonhigh" regions, all "intermediate" regions, and all "nonlow" regions. A region is "low" if Muslim/Hindu expenditure ratios in that region are systematically lower than the national average for every one of the three time periods, and "nonlow" otherwise. "High" and "nonhigh" are defined analogously. A region is "intermediate" if it is neither high nor low.

- These findings speak to the origins of Hindu-Muslim violence in post-Independence India.
- Economic progress of enemies may heighten the resentment and spite that one feels + systematic use of violence for economic gain.
- Hindu groups have largely been the aggressors in Hindu-Muslim violence in India
- Attacks on the Muslim community can be traced to various forms of Muslim economic empowerment.

Untouchability (Dasgupta & Pal, 2021)

- Dasgupta and Pal (2021) extend the idea from Mitra and Ray (2014) to caste related conflict in India.
  - Their findings are orthogonal to the findings of Mitra and Ray (2014).
- Untouchability and related conflict depends on the inter-group distribution of resources across both caste and religious divides
- However, it becomes less prominent with a relative increase in the collective resource endowment of the lower castes.

Experimental Evidences



Experimental Evidences of Identity and Conflict

- Researchers employ both natural and minimal identities with clear methodological protocols to investigate research questions.

- Natural identity: make such identity salient by either mentioning the identity (see, e.g., Chowdhury et al., 2016) or by priming on such identity (see, e.g., Shih et al., 1999)

- Minimal identity: subjects are assigned with some individual level task irrelevant to the conflict game, and depending on the outcome of this task they are assigned to mutually exclusive groups
  - Example: choice between a pair of paintings (Chen and Li, 2009).

First ever experiment on Identity and Conflict

Rattlers and Eagles sizing up each other prior to first contest. Note team captains

Eagles in one of their huddles praying for victory prior to a contest.

- **Robbers cave experiment by Sherif et al. (1961)**
- Run in 1954 in the Robbers cave state Park, Oklahoma.
  - Stage I: 22 pre-teenage boys were randomly assigned in two groups and the group identity was made salient by performing group work.
  - Stage II: groups were engaged in various camp game contests.
  - Stage III: groups were integrated and joint teamwork based tasks were run to enforce mitigation.

Robbers cave experiment by Sherif et al. (1961)

- In Stage II, there were hostility and aggressive behavior against the out-group members by both the groups.
- The effect of identity in the escalation of conflict among otherwise homogenous subjects with no prior history of conflict

Can existing conflict history make it worse?

- Diab (1970) replicated the Robbers cave experiment in Lebanon with 10 Christian and 8 Muslim pre-teen subjects divided equally into two groups (5 Christian and 4 Muslims in each group).
  - Existing conflict between Christians and Muslims in Lebanon.
- The two groups were named as "blue ghosts" and "red genies".
- In Stage II (conflict), a physical and violent fight broke out between the subjects and Stage III was cancelled.
- Surprisingly, the conflict broke out between the two artificially created groups, and not between the two religious groups.
  - Salience of even minimal group can escalate conflict.

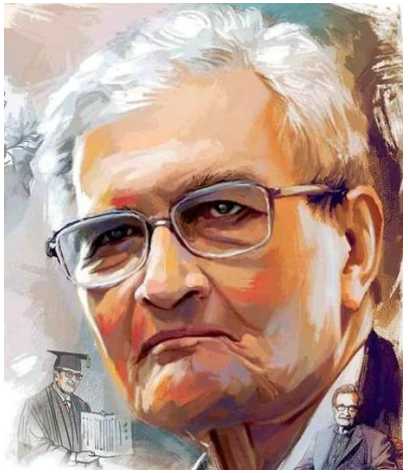
Multi-Dimensional Identity

- Sen (1985, 2007) coins the idea of multi-dimensional identity.
  - An individual can be characterised into various groups in terms of their gender, age, language, nationality, race, religion etc.
  - However, when only one dimension of such identities become salient and dominant, then it initiates and escalates conflict.
  - All identities do not have the same effect. Real identities will result in conflict, but mere classifications would not.
- Basu (2005) also notes that we do not see conflict between short and tall people (salient classification) but are very acquainted with religious wars and ethnic tensions (real identities).
  - Both the classifications are visible and salient, but they do not have the same effect on conflict or conflict escalation.

Chowdhury, S.M., Jeon, J., & Ramalingam, R. (2016). Identity and Group Conflict. European Economic Review, 90, 107-121.

- The result of Diab (1971), hence, seems to be in contradiction with the hypothesis by coined Sen (2007)
- Further experiments are run to understand the relationships
- Chowdhury et al. (2016) run three between-subject treatments lottery contest between two groups, to test Sen's hypothesis.
- Results support the hypothesis of Sen – salience of a real identity increases conflict, but that of a classification does not.

Intriguing question



- Is Sen right? *Literature exhibits that an introduction of real or artificial identity elicits in-group out-group discrimination*
  - Diab claims the opposite and it is still to observe in a controlled setting whether an introduction of racial identity information increases 'Conflict'
  - Does real racial identity increase conflict more than induced artificial identity?

Theoretical background

- n number of groups compete for a group-specific public good prize of value V and the number of members in each group is m
- Each (risk-neutral) player has the same budget b
- Player i of group g can spend effort $x_{gi} \in [0, b]$ for its group
- The total group effort of group g: $X_g = \sum_i x_{gi}$
- Probability that group g wins: $p_g = \begin{cases} X_g/X & if\ X \neq 0 \\ 1/n & otherwise \end{cases}$
- Hence we use a perfect substitute *impact function* and a Tullock group *contest success function*
- The expected payoff of the player is: $\pi_{gi} = p_g V + (b - x_{gi})$
- Individual equilibrium efforts cannot be determined, but each group would spend $X^* = V(n-1)/n^2$ (Katz et el., 1990)

Experimental design

- Two-group contest with three players in each group ($n=2$, $m=3$) and the common value of the prize is 40 points ($v=40$)
  - The equilibrium group effort level (X^*) is 10
- Total of 20 rounds of the contest. In each round subjects were endowed with 60 points ($b=60$)
- Three treatments
  - **Baseline:** the contest is run between Whites versus East Asians, but no information about the group composition was revealed
  - **Real Identity:** Same as above, but the racial compositions were common knowledge
  - **Induced identity:** Same as baseline, but the groups were tagged as 'Blue' or 'Green'; the colors were 'balanced' and no information about racial composition was revealed

Experimental design

Whites

vs.

Asians

Experimental design

Whites vs. Asians

And…

Whites vs. Asians

Experimental design



Whites vs. Asians

And…



Whites vs. Asians

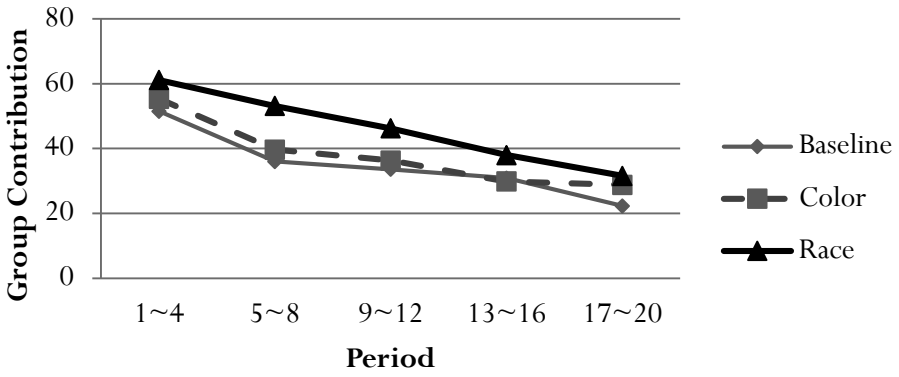
And…



Whites vs. Asians

Results: Group effort distribution

Treatment	Baseline	Color	Race
Mean	34.87	38.01	46.01
Std. Dev.	13.16	9.61	17.40



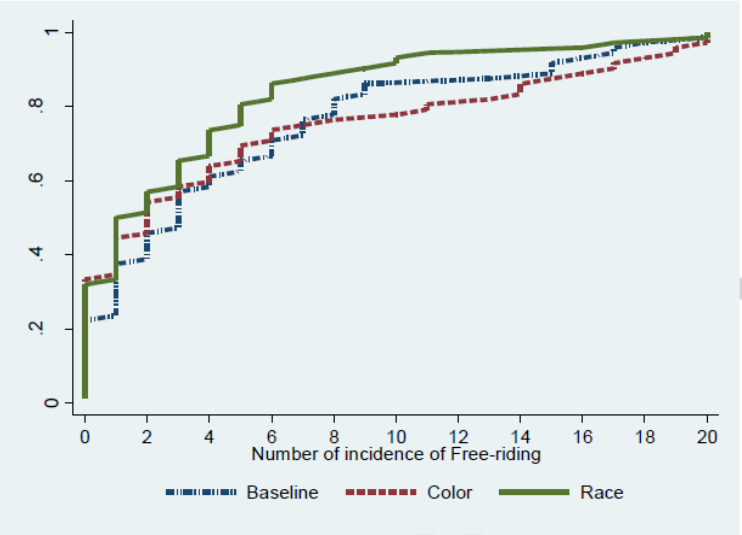
- We observe overbidding in all three treatments (recall, Nash = 10)
  - Bids seems to increase when identity is introduced
  - It seems to be robust over the periods
  - A Kruskal-Wallis test shows difference in distributions + Regression

- **Result**: *Group* efforts *are significantly higher in the race treatment compared to the Baseline treatment, it is not true for the color treatment.*

Race, gender, free-riding

	Baseline	Color	Race
Male	11.523	11.313	12.407
Female	11.718	14.184	18.265
White	11.539	11.510	14.788
East Asian	11.707	13.828	15.885
All	11.623	12.669	15.336

Figure 3. Empirical CDFs of the incidences of free-riding



- An introduction of real identity increases conflict effort for both races, supporting the hypothesis by Sen (2007)
  - Due to both reduction in free riding and increase in effort spent
  - But an induced identity does not have the same significance

Hindu-Muslim (Chakravarty et al., 2016)

- Following similar structure as in Chowdhury et al. (2016), Chakravarty et al. (2016) run a lab-in-the-field experiment of individual contest in India with Hindu and Muslim subjects.
- Hypothesis: Effort level in homogenous religion pairs should be lower than in heterogenous religion pairs in villages with higher level of religious fragmentation.
- The average expenditure by subjects are sensitive to the identity of their match, or to the type of village in which they reside only in the case of the Hindu sample, and not in the Muslim sample (overall positive effect).
- Fragmentation made social identity more salient (aversion to advantageous inequality).

Hindu-Muslim (Chakravarty et al., 2016)

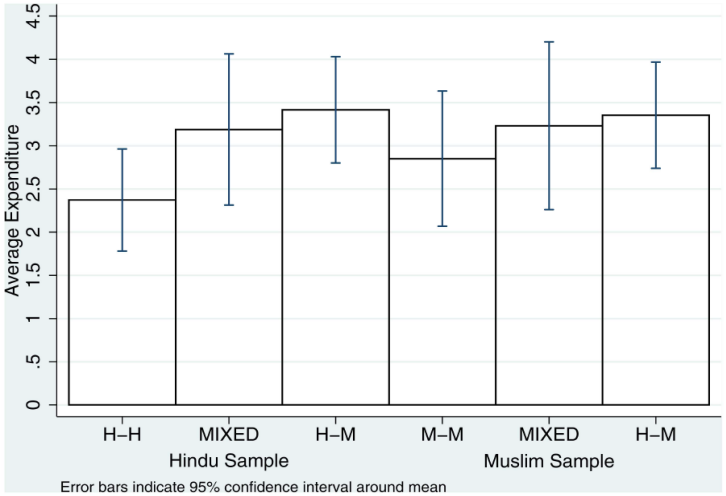


Fig 1. Average expenditure levels (measured by purchased tickets) in fragmented villages by treatment.

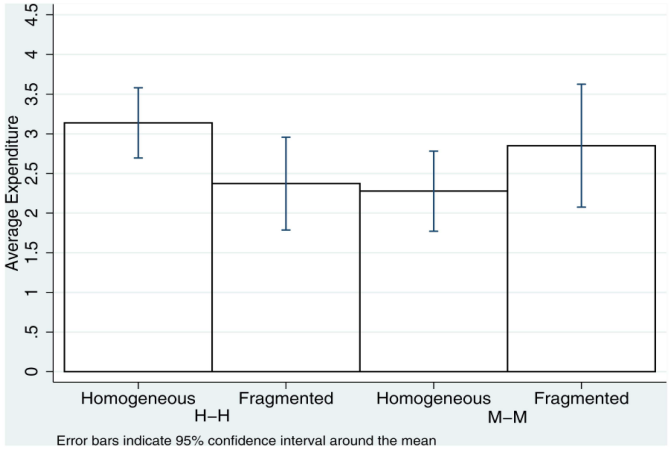


Fig 2. Average expenditure levels (measured by purchased tickets) in H-H and M-M treatment in fragmented and homogeneous villages.

- Weak correlation between educational level and overbidding could have led to this result (Hindus have higher level of education).
- Muslims always identify as minority in India and hence irrespective of the religious fragmentation in the chosen village, their overall effort level is reflective of their identity perception.

What drives effort in such conflicts?

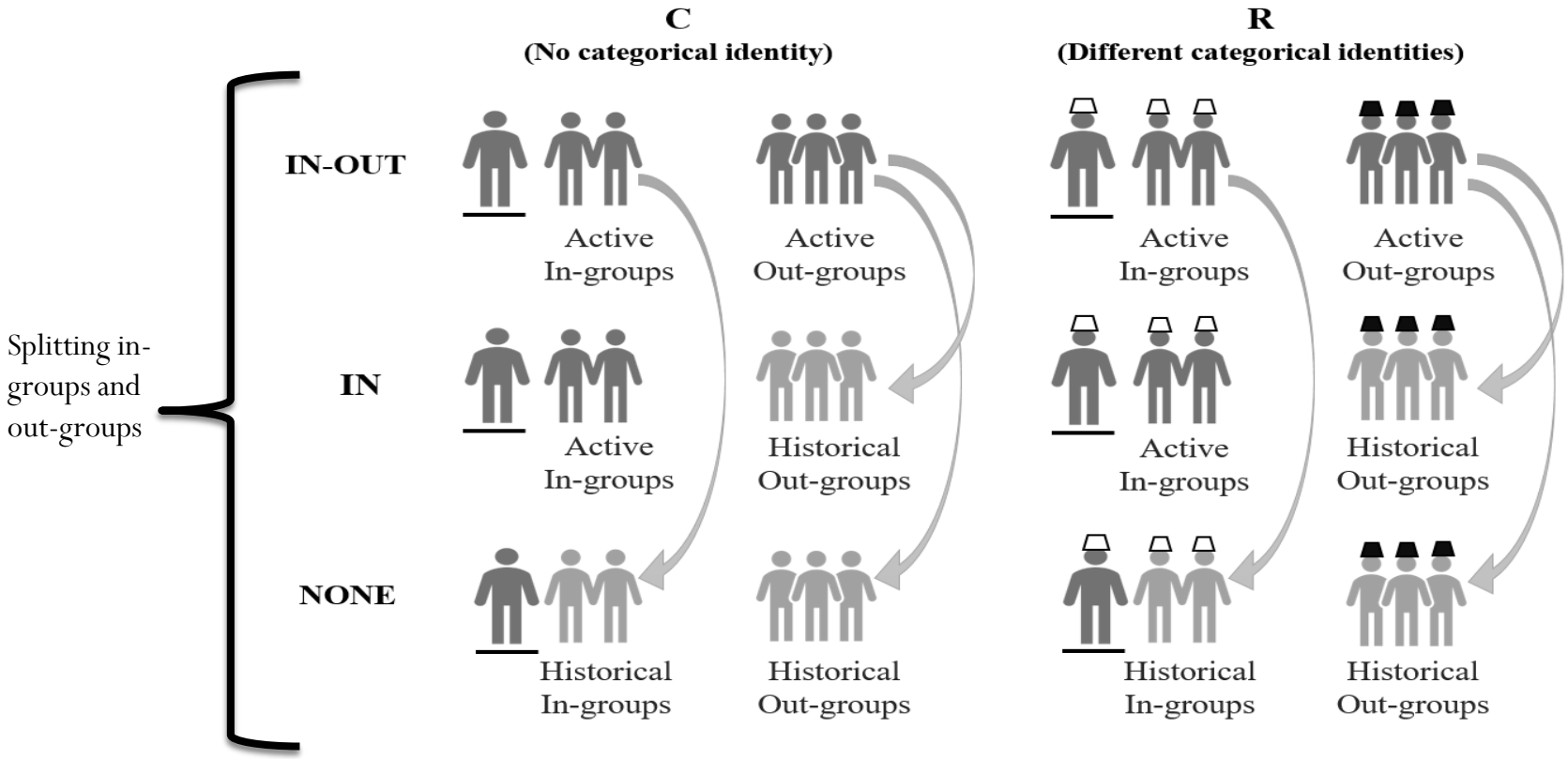
- Can occur due to (Bernhard et al., 2016; Choi and Bowles, 2007)
  - In-group love or cohesion
  - Out-group hate or Spite
  - Combination of the two: parochial altruism
- Shayo (2010) finds that individuals vote to support their in-group even at a cost of their own income.

- Abbink et al. (2012) try to investigate this in a sequence of prisoner's dilemma game and group contest
  - Results cannot be explained by rational model or spite or cohesion.
  - They conclude that overall parochial altruism drives the level of conflict, increasing the level of conflict in the presence of identity.

Identity in group setting vs. individual setting

- It is well known that subjects exert less effort while in a group compared to while contesting alone.
- Huang et al. (2018) run a group all-pay auction where the subjects were either simply allocated in two groups, or the groups comprised Republicans and Democrats.
  - Even when the political identity is made salient, the effort provision in a group setting remains lower than in an individual setting.
- Chowdhury et al. (2021) aim to tease out in-group love, and out-group hate in a group contest in which subjects are paired with either humans, or in-group members were robots, or out-group rivals were robots – with and without a minimal identity.

Identity in group setting vs. individual setting



Design for Chowdhury et al. (2021); C = Concealed Identity; R =Revealed Identity

Identity in group setting vs. individual setting

- Chowdhury et al. (2021) aim to tease out in-group love, and out-group hate in a group contest in which subjects are paired with either humans, or in-group members were robots, or out-group rivals were robots – with and without a minimal identity.
  - The presence of in-groups enhances concern about individual payoffs
  - But the additional presence of out-groups moderates concern for individual payoffs through an additional concern for group payoffs
  - The negative effect of the in-group preferences and the positive effect of the out-group preferences are weaker with identity.

Reference and Possible Additions

- Existing studies of identity and conflict confine themselves to unidimensional effort – overlooking multi-battles or even sabotage.
- The literature views the parties engaged in conflict 'similar' – they exert effort with the same objective, i.e., to win the conflict.
  - There can be "attackers" who exert efforts to defeat "defenders".
- Study on the impact of endogenous identity on conflicts is rare.
- Few investigations of how multi-dimensional identity leads to intra-group conflict, or how one identity becomes salient
- Examination into the identity driven affirmative action and conflict.
  - Girard (2020) provides a first empirical result from India that such affirmative action increases the number of murder of lower castes.
- Does identity instigate conflict, or does conflict make identity salient?
- Chowdhury, S.M. (2021). *The Economics of Identity and Conflict*. In the Oxford Research Encyclopedia of Economics and Finance, Oxford University Press.