

#### Persuasive Deception and Dyadic Power Theory

Presented by: Norah Dunbar, Ph.D.

Authors: Becky R. Ford, University of California, Santa Barbara

Bradley Dorn, University of Arizona

Mohammed Hansia, University of California, Santa Barbara

Norah E. Dunbar, University of California, Santa Barbara

Matt Giles, University of California, Santa Barbara

Miriam Metzger, University of California, Santa Barbara

Judee K. Burgoon, University of Arizona

V.S. Subrahmanian, Dartmouth College

1



# Dyadic Power Theory

(Dunbar, 2004)

- More dominance when dyads are equal than unequal.
- Chilling effect for low power partners
- High power partners don't want to rock the boat.
- Equal power partners vie for dominance.
- "Fight" or "flight" approach to dominance.
- Can DPT be applied to groups?
- How do groups differ in how the react to deception?
- Do groups differ in dominance by culture?



### **Persuasive Deception**

(Dunbar et al. 2014, *Communication Research*)

- Deceivers motivations for deception and strategies for deception are affected by power.
  - "Flight": Stay behind the scenes, avoid interaction, move the focus off themselves.
  - "Fight": Aggressively defend position, attack or dominate conversation
- Which strategy will an individual deceiver choose?
- Do deceivers in a group coordinate their response?



# The Mafia Game

#### Experiment Layout



- Personality pre-survey
- Games in groups of 5-8 players
- Randomly assigned as "Spy" or "Villager"
- Each game round consists of 3 phases:
  - Leader election
  - Team selection
  - Mission
- Play for 1 hour or up to 8 rounds with 2 or 3 spies
- Deception ground truth



### Fight or Flight? An Example Game (008SB)

- 1117 distinct utterances across 5 rounds
- Villagers spoke 148 times each (on average)



- Player 1
- Spoke 24 times
- 1 lie
- 2 misdirections
- Deception 13.63%

- Player 5
- Spoke 48 times
- 3 lies
- 7 misdirections
- Deception 21.73%

- Player 8
- Spoke 179 times
- 12 lies
- 37 misdirections
- Deception 27.37%



### 8 cites in 6 countries (N = 695)



US Sites	International Sites
Arizona (N= 61, 9 games)	Israel (N = 64, 9 games)
California (N = 78, 11 games)	Singapore (N = 84, 12 games)
Maryland (N = 70, 10 games)	Fiji (N = 106, 14 games)
	Zambia (N = 117, 15 games)
	Hong Kong ( N = 115, 15 games)



- Triandis Self-Report on Culture
- Horizontal collectivism—group harmony, equality
- Horizontal Individualism—individual decision making
- Vertical collectivism—sacrifice for group
- Vertical individualism—competition with others



### Comparisons across countries

Collectivism/Individualism





#### Comparisons across countries









## Power roles in the Mafia game

- Spies: have informational power about roles but trying not to show their hand.
- Villagers: have information deficit and unclear how they will deal with it. Treat all other players as potentially high power?
- Players with previous game experience: have skills that novices lack.
- Cultural construal: dominance treated as suspicious or as a leader depending on norms.
- Males: have greater dominance in many cultures.



H1: There will be a bimodal distribution of truth-tellers' ratings of deceivers' dominance, such that deceivers will be rated as exhibiting either lower or higher dominance than truth-tellers.



- H1 not supported.
- DV is dominance
- Does not appear to be bimodal.
- Spies are less dominant overall, only differing from Villagers on one side.



RQ1: Are deceivers more likely to use similar or differing levels of dominance among one another?

Variables	В	SE	ß	
Otherspydom	0.19	0.09	0.25	*
Villager_dominance	0.00	0.12	0.00	
Model Summary				
df			2, 230	
R²			0.02	
F			2 52	+

- "Other spy dom" is ratings of other spies (and not the spy in question) by villagers
- Villager dominance is ratings of villagers by other players.
- Spies similar to each other.



RQ2: How do deceivers manage their dominance over the course of the game?

Variables	В	SE	ß	
Dominance_r2	0.77	0.07	0.81	***
Villagers_win	0.04	0.34	0.08	
Dominance_r2:Villagers_win	-0.06	0.10	-0.07	
Model Summary				
df			3, 208	
R²			0.53	
F			76.84	***

- Round 2 dominance predicts dominance at the end of the game.
- No change in strategy.



H2: There will be an interaction between dominance and culture, such that the more an individual identifies with collectivism, the less they will trust dominant individuals.

Variables	В	SE	ß
Dominance	-0.16	0.26	-0.15
Horcolsc1	-0.19	0.16	-0.18
Vertind_sc1	-0.11	0.08	-0.07
Vertcoll_sc1	-0.05	0.09	-0.03
Horind_sc1	0.07	0.16	0.07
Prev_game	-0.13	0.05	-0.20 *
Sex	-0.13	0.05	-0.21 *
Role	-0.86	0.05	-1.42 ***
Dominance:Horcolsc1	0.08	0.05	0.08 †
Dominance:Vertind_sc1	0.04	0.02	0.04 †
Dominance:Vertcoll_sc1	0.02	0.03	0.01
Dominance:Horind_sc1	-0.06	0.05	-0.04
Model Summary			
df			12, 593
R <sup>2</sup>			0.40
F			32.54 ***

- H2 not supported
- DV is trust
- Experienced players less trusted
- Males less trusted
- Spies less trusted
- HC and VI trust dominant individuals more (effect is very small).





H3: Deceivers will be rated as more dominant in individualistic cultures (US, Israel) than in collectivistic ones (Singapore, Hong Kong, Fiji, Zambia)

Variables	В	SE	ß	
Role	-0.71	0.19	-1.13	***
Hk	-0.32	0.15	-0.10	*
Isr	-0.32	0.17	-0.51	†
Zam	-0.28	0.15	-0.09	†
Role:Hk	0.71	0.24	1.12	**
Role:Isr	0.64	0.27	0.21	*
Role:Umd	0.62	0.26	0.98	*
Role:Usp	0.60	0.24	0.20	*
Role:Zam	1.11	0.24	1.75	***

#### Model Summary

	15, 678	df
	0.09	R²
***	4.54	F

- H3 not supported
- DV is dominance
- Spies less likely to be rated dominant overall
- Spies in Hong Kong, Israel, MD, Fiji and Zambia more likely to be seen as dominant than control group.

<sup>+</sup>*p* < .10; \**p* < .05; \*\**p* < .01; \*\*\**p* < .001

Note: NS rows deleted



H4: Female participants will be rated as less dominant than male participants

Variables	В	SE	ß	
SexMale	0.22	0.06	0.37	***
Prevgame	-0.28	0.07	-0.46	***
Hk	0.02	0.13	0.01	
Isr	-0.08	0.14	-0.14	
Ntu	0.02	0.14	0.04	
Sb	-0.01	0.14	-0.01	
Umd	0.06	0.15	0.02	
Usp	0.69	0.13	1.19	***
Zam	0.32	0.13	0.53	*
Role	-0.31	0.06	-0.52	***

#### Model Summary

df	10, 660
R <sup>2</sup>	0.13
F	9.66 ***

- H4 is supported
- DV is dominance
- Males more likely to be seen as dominant.
- Spies less dominant
- Players with previous experience less dominant.
- Fiji & Zambia players rated more dominant

<sup>&</sup>lt;sup>+</sup>*p* < .10; \**p* < .05; \*\**p* < .01; \*\*\**p* < .001



RQ4: Does gender moderate the relationship between dominance and trust?

Variables	В	SE	ß	_
Sex	0.15	0.26	0.25	
Dominance	0.36	0.05	0.34 ***	
Sex:Dominance	-0.09	0.07	-0.14	

#### Model Summary

	3, 608	df
	0.11	R <sup>2</sup>
***	24.82	F

- Sex and dominance do not interact.
- Dominance is related to trust (.35 correlation)



RQ3: Do deceivers with previous game experience differ in dominance from truthtellers with previous game experience?

Variables	В	SE	ß	
Prev_gam	-0.17	0.08	-0.29	*
Game_role_ratee	-0.68	0.21	-1.16	**
Prev_gam:Game_role_ratee	0.25	0.13	0.41	ţ



- Villagers more dominant when unexperienced
- Spies more dominant when experienced (barely).

	Νο	Experience
	Experience	
Villager	3.78	3.61
Ѕру	3.10	3.18

<sup>+</sup>*p* < .10; \**p* < .05; \*\**p* < .01; \*\*\**p* < .001



## Summary/Discussion

- Spies less dominant than villagers. They pick a common strategy and stick with it over the course of the game.
- Spies are less trusted than villagers. Perhaps villagers are picking up on something even if their accuracy is poor.
- Players with previous experience are less dominant and are also less trusted. This may be especially true for spies.
- Culture plays a role if players see each other as more dominant than other cultures.
- High HC and high VI countries are the most likely to trust dominant players.
- Males are seen as more dominant and less trusted (even though trust and dominance are positively correlated).



## Implications for Groups in DPT

- DPT assumes that people know when they have a power deficit but unclear what happens when they lack knowledge on that.
- Group members with a similar power role may work together to achieve goals even when they cannot explicitly collaborate.
- Group members have to establish trust in order to use dominance (control attempts) effectively.
- Deceivers seems to be using the "flight" strategy in this situation.